

CA20N
TR
-74571A

0-1

Government
Publications

SCHEDULE 'A'

The Future Demand for Urban Land
in the Sudbury Area




S SUDBURY
AREA PLANNING STUDY

SUDBURY AREA
PLANNING STUDY

SCHEDULE 'A'

THE FUTURE DEMAND FOR URBAN LAND
IN THE SUDBURY AREA



Digitized by the Internet Archive
in 2022 with funding from
University of Toronto

<https://archive.org/details/31761115462343>

THE STAFF
OF
THE SUDBURY AREA PLANNING STUDY

Mark Heitshu	Director
Pierre Beeckmans	Associate Director
Sylvia Cornell	Research assistant
Madelaine Vezina	Secretary
Rick Fujiwara	Graphics

GOVERNMENT CONSULTANTS

Michael Gain & Kevin Ryan	Computer Services Centre, Ontario Ministry of Treasury, Economics and Intergovernmental Affairs
Malcolm MacLoed & Frank Holt	Photogrammetry Office, Ontario Ministry of Transport and Communications

PRIVATE CONSULTANTS

M.M. Dillon Limited	Waterworks Sewerage Transportation Utilities Waste Disposal Flooding & Drainage
Gartner Lee Associates Limited	Terrain Evaluation Groundwork Septic Tank Suitability
Hough-Stansbury & Associates Limited	Wildlife Fisheries Vegetation Scenic Qualities Recreation Computer Program

MINISTRY OF TREASURY, ECONOMICS AND INTERGOVERNMENTAL AFFAIRS

The Honourable John White Treasurer of Ontario Minister of Economics and Intergovernmental Affairs	H. Ian MacDonald Deputy Minister
---	-------------------------------------

D.F. Taylor
Executive Director-
Local Government Services Division

TABLE OF CONTENTS

	Page
Area definitions	III
I. POPULATION PROJECTION	
List of figures and tables	1
1. Introduction	2
2. The future of the mining industry in the Sudbury area	7
3. Projected employment in the Sudbury area	10
4. The projected future population of the Sudbury area	15
5. Distribution of population growth	20
II. EXISTING LAND USE	
List of figures and tables	23
1. Introduction	24
2. General standards for Land Use Relationships	26
3. A comparison of Sudbury Area Statistics with typical standards	30
(a) The City of Sudbury	30
(b) The Towns	32
(c) The Semi-Urban Places	32
4. Conclusions	39
III. HOUSING	
List of figures and tables	41
1. Introduction	42
2. Housing construction activity 1956-1972	43
3. The capacity of the housing stock	46
4. Housing conditions	49
5. Dwelling types and tenure	51
6. Housing costs	52
7. Conclusions	59

A R E A D E F I N I T I O N S

In the course of this study, reference is made to a number of different areas. For ease of reference, each of these areas is described hereunder and is shown on Figure A.

1. The City of Sudbury: the area within the boundaries of the municipality. This area has changed considerably since the incorporation of the City of Sudbury in 1930, as a result of annexations and amalgamations in 1931, 1951, 1956, 1957, 1960, 1962 and 1973.
2. Metro Sudbury: this refers to the census metropolitan area. In 1956, 1961 and 1966, the Census Metropolitan area of Sudbury comprised the City of Sudbury, the towns of Chelmsford, Coniston, Copper Cliff and Lively, the townships of Blezard, Neelon and Garson, Rayside and Waters and a small unorganized area (Creighton). In 1971, the Town of Capreol and the townships of Balfour, Falconbridge, Valley East, Broder, Dill and Snider were added.
3. The Nickel Basin: an area defined in the Nickel Basin Planning Study, prepared in 1967 by consultants Sawchuk and Peach for the province and C.M.H.C. It comprises about 900 square miles and includes all of Metro Sudbury as well as the town of Levack, the Improvement District of Onaping and the following townships: Dowling, Drury, Denison and Graham, Cleland, Dryden, Fairbank, Levack, Lumsden, MacLennan, Morgan and Norman.
4. The Regional Municipality of Sudbury: the new Regional Municipality created by the Province covers about 1100 square miles.
5. The Study Area: as defined by the Sudbury Area Planning Study, this area covers a little under 3600 square miles, corresponding approximately with the retail trade area of the City. Extending in a radius of some 35 miles from the city, it includes Cartier, Nairn, French River, Warren, Lake Wanapitei and Sellwood near its outer boundaries.
6. The District of Sudbury: an administrative territorial division of the province, comprising 26 organized municipalities and numerous unorganized townships. (Over 10,000 square miles)
7. The Sudbury Area: a general reference to the area centered on the City of Sudbury, without specific boundaries. This descriptive term is sometimes appropriate when a statement is made which is not necessarily limited in its application to any of the above-noted defined areas.

AREAS DESCRIBED in the TEXT

Regional Municipality

Area Municipality

Nickel Basin

Metro Sudbury—1956

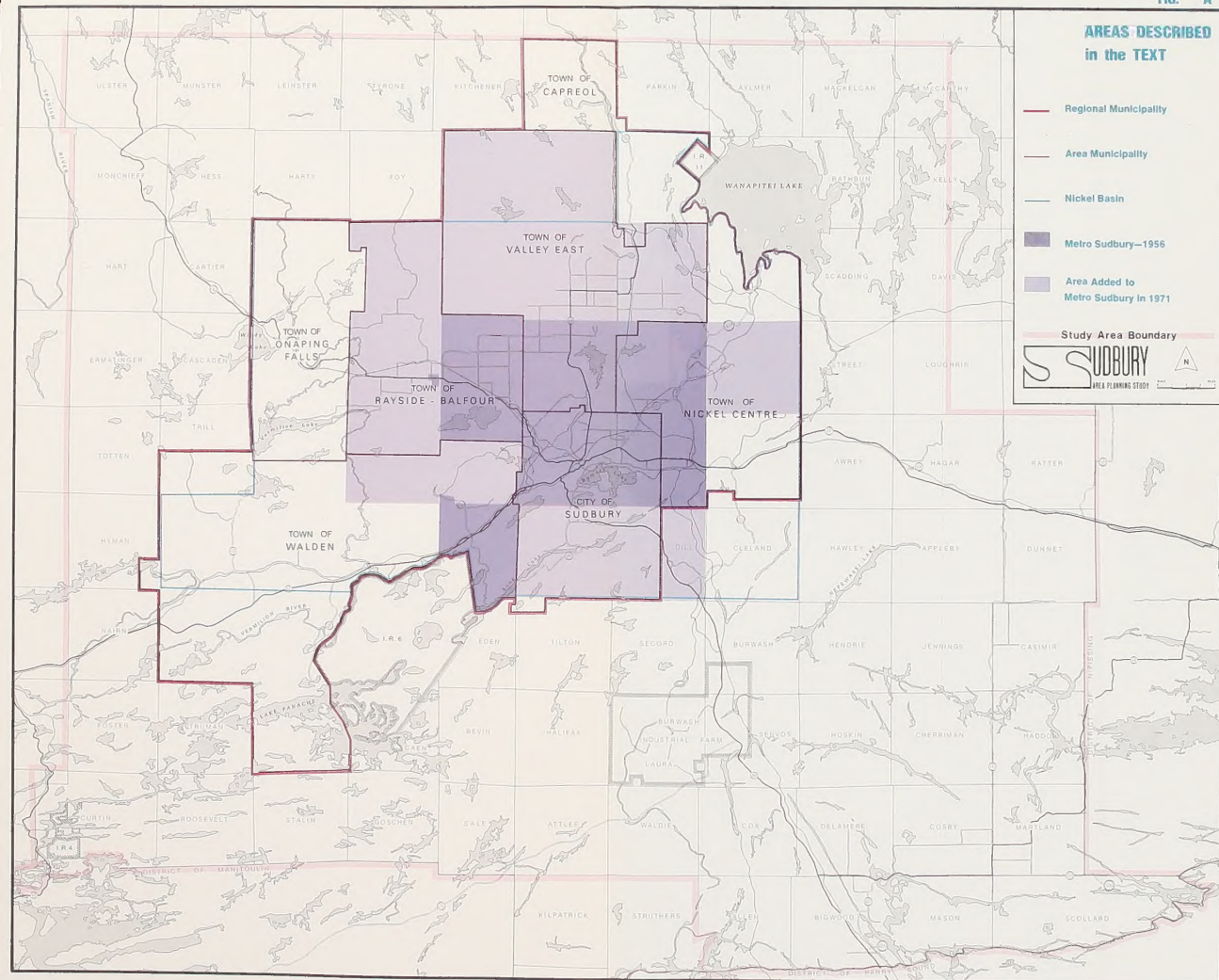
Area Added to
Metro Sudbury in 1971

Study Area Boundary

SUDBURY
FIELD PLANNING STUDY



0 1000 2000



SECTION I

POPULATION PROJECTION

FIGURES

		Page
P1	Growth comparison: Mining, employment and population	3
P2	Percentage distribution of world nickel production	9
P3	Population Growth 1961-1971	following page 20
P4	Population Distribution 1972	following page 22

TABLES

		Page
P-A	Growth rates of nickel production and population	4
P-B	Growth of Sudbury area mining and population 1961-1971	5
P-C	Salaried employees and wage-earners in nickel-copper mining in Ontario, 1951-1971	11
P-D	Metro Sudbury - population projection by sex and by 5-year age groups, 1966-2001	16
P-E	Population projection by J.R. Winter (1967)	18
P-F	Ontario Housing Corporation Population Projections 1966-1981	19
P-G	Average Annual Rate of Growth - Nickel Basin Population 1901-1971	19
P-H	Projected Population Growth - Regional Municipality of Sudbury	19
P-I	Sudbury Area Growth Rates - 1951-1971	20
P-J	Population Growth and Average Annual Rate of Growth, Sudbury Region and Components	21

SECTION I
POPULATION PROJECTION

1. INTRODUCTION

Future land requirements for urban use can be related to the projected future population, since a relationship can be established between the total area of land needed for all urban purposes and the number of people occupying that land.

In an area such as the Study Area, a population projection can be closely related to a projection of future employment. The vicissitudes in total employment have in the past, to a considerable degree, reflected the fluctuations in the employment provided by the dominant nickel industry, and these fluctuations have in turn been related to the growth or decline of production in that industry. Figure P1 compares the growth of nickel production, mining employment, total industrial employment and population.

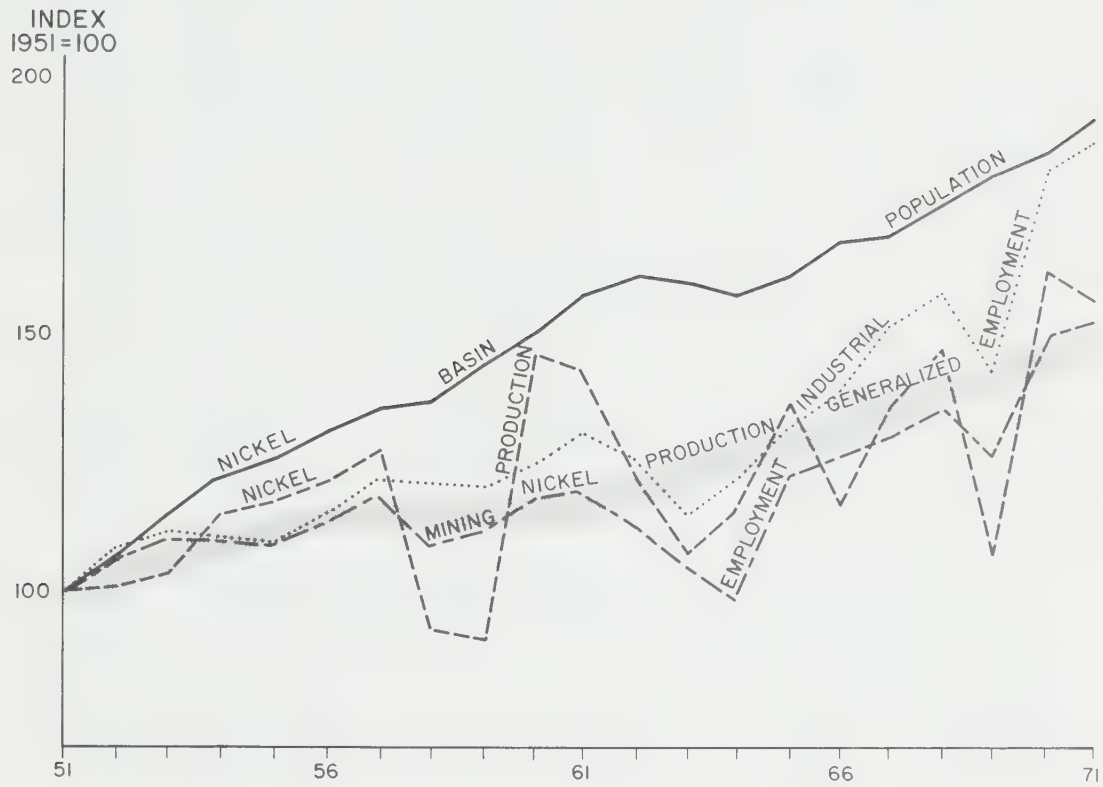
The production curve shows the extreme fluctuations typical of the mining industry, but a general growth trend can be discerned. In order to reduce distortion in determining the growth rate, it is necessary to average production figures for a period of several years and compare this with the average production in a different period. Table P-A shows average production figures over five-year periods and illustrates the growth rates between each of these periods. Negative growth is recorded in the late fifties and early sixties, whereas the strongest growth occurred prior to 1956. Over a 20-year period, the average annual growth rate has been determined in this manner to be of the order of 2.2%.

The mining employment curve differs somewhat from the mining production curve, due mainly to the fact that significant employment fluctuations may occur within a single year and the number quoted for any given year is not an average for the year but the actual employment figure at the time of year when the figures are compiled. Over a twenty-year period, the growth of mining employment has not lagged very significantly behind the growth of production; mining employment grew by 53% whereas nickel production grew by 58%.

Table P-B documents the growth of mining and employment since 1931. Over the years the number of employees needed to produce a million pounds of nickel has varied considerably but without any significant downward trend. Automation has clearly reduced

FIGURE P 1

GROWTH COMPARISON: MINING EMPLOYMENT AND POPULATION



SOURCES

Nickel Basin Planning Study
Municipal Statistics
Annual Statistical Report on the Mineral Production of
Ontario, Ministry of Natural Resources
Review of Employment, Statistics Canada Cat. 72-002

TABLE P-A
GROWTH RATES OF NICKEL PRODUCTION AND POPULATION

ONTARIO NICKEL PRODUCTION (1)				NICKEL BASIN POPULATION		
	Annual Average Production (short tons)	Growth Between Five-Year Averages (short tons)	Annual Average Growth Rate	Persons	5-Year Growth	Annual Average Growth Rate
Period 1947 - 1951 Growth	128,102	26,098	3.8%	1946 46-51 1951	69,035 15,843	4.2%
Period 1952 - 1956 Growth	154,200	21,074	2.6%	51-56 1956 56-61	30,587 21,888	6.3%
Period 1957 - 1961 Growth	175,274	-9,422	-1.1%*	1961 61-66	137,353 9,486	3.5%
Period 1962 - 1966 Growth	165,852	30,635	3.4%*	1966 66-71	146,839 21,874	1.4%
Period 1967 - 1971	196,487			1971	168,713	2.8%

* The average annual growth rate for nickel production calculated over the last 10 years amounts to about 1.2%.

(1) Source: Calculated from information published in the Annual Statistical Report on the Mineral Production of Ontario, Ministry of Natural Resources, Ontario.

TABLE P-B

GROWTH OF SUDBURY AREA NICKEL MINING AND POPULATION 1931 - 1971

	1931	1941	1946	1951	1956	1961	1966	1971
Total Ore Mined (millions of pounds)	Inco	3,160	18,588	15,472	23,598	31,022	34,978	31,434
	Falco	268	1,360	976	2,172	3,700	5,064	4,206
	Total	3,428	19,948	16,448	25,770	34,722	40,042	35,640
Nickel production (millions of pounds)	Inco	65	282	178	260	297	341	340
	Falco	5	19	12	27	43	65	79
	Total	70	301	190	287	340	406	419
Employment	Inco	3,812	10,947	9,239	15,968	16,358	16,675	18,400
	Falco	251	1,034	800	1,840	2,834	2,896	3,247
	Total	4,063	11,981	10,039	17,808	19,192	19,571	21,647
Employees per million pounds of ore mined	Inco	1.21	0.59	0.60	0.68	0.53	0.48	0.59
	Falco	0.94	0.76	0.82	0.85	0.77	0.57	0.77
	Total	1.19	0.60	0.61	0.69	0.55	0.49	(0.61) (1) 0.45
Employees per million pounds of nickel produced	Inco	59	39	51	61	55	49	76
	Falco	50	54	67	68	66	47	41
	Total	58	40	53	62	56	48	(68) (1) 54
Nickel Basin Population	37,499	59,861	69,035	84,878	115,465	137,353	146,839	168,713
Mining Employment as a % of Nickel Basin Pop.	Inco	10.2	18.4	13.4	18.7	14.2	12.2	12.5
	Falco	0.7	1.7	1.2	2.2	2.5	2.1	2.2
	Total	10.9	20.1	14.6	20.9	16.7	14.3	14.7

Sources: 1. Correspondence: Inco and Falconbridge
2. Nickel Basin Planning Study

(1) This figure is distorted due to a strike during part of the year.

the manpower needed to extract a million pounds of ore, but the extracted ore has become leaner as the richer veins have been mined out and the result has been a growth of employment only slightly lower than the growth of production. The continued increase in mining employment and industrial employment in the late nineteen-sixties may have been due, however, to construction activities related to mining, because statistics for 1972 and 1973 would show a severe decline in the employment curves.

Industrial employment grew in excess of mining employment during the nineteen-fifties but very little industrial employment growth, other than mining, has occurred in more recent years. Over twenty years, the industrial employment index has risen by 89%, which is substantially in excess of mining employment and nickel production growth.

The growth of population has been particularly strong in the early nineteen-fifties, when an average annual growth of over 6% was recorded (See Table P-A). More recently, between 1961 and 1971, the average was about 2%. During both decades, the growth of population has generally exceeded the growth of nickel production. From 1951 to 1971, the population growth of 94% has outstripped industrial employment growth, suggesting that non-industrial employment growth has been particularly strong.

The percentage of the population employed in mining is documented in Table P-B which shows a trend since 1951 for a decline from about 20% in 1951 to about 15% in 1961, 1966 and 1971.

In order to predict the demand for urban land in the Sudbury area, it is essential to consider the future of the nickel mining industry. Although the future of the region is not necessarily tied entirely to the fortunes of one industry, the prospects for diversification of the economic base are not such that a very significant reduction in the dominance of the mining industry should be anticipated.⁽¹⁾

The following sequential topics will be considered: the future of the mining industry in the Sudbury area; projected employment in the Sudbury area; projected future population of the Sudbury area.

(1) Hodge G. and Wong C. Prospects for an Expanded Non-Ferrous Metals Industrial Complex for Northern Ontario. Ontario Department of Treasury and Economics, 1970

2. THE FUTURE OF THE MINING INDUSTRY IN THE SUDBURY AREA

As recently as 1968, authoritative sources (1) were quoted as confidently predicting that mining would continue strongly in the Sudbury area well into the next century. More recently, estimates have generally assumed a more cautious character. The reason seems to be related to the increasing importance of nickel ore obtained from lateritic deposits in semi-tropical areas and to the fact that the Sudbury area's production can only be increased significantly by mining leaner and deeper ores.

Although the demand for nickel is expected to continue rising, Canada's large ore reserves are becoming progressively more expensive to mine and process, relative to lateritic deposits, and will therefore probably be developed at a slower rate.(2)

The increasing importance of ore deposits in Manitoba is another trend with implications for the Sudbury region. During the past dozen years, Manitoba's share of total Canadian nickel production has risen from a negligible portion to more than 25 per cent.(3)

All sources seem to agree that the rate of world consumption of nickel will continue to grow. An annual consumption growth rate of between 6% and 8% has been estimated.(4) At least one group of researchers has predicted an exponential growth of resource consumption indicating total depletion of many resources in the foreseeable future.(5) Nickel is estimated to last longer than most resources, mainly because of the significant relatively untapped reserves and potential ore in Cuba, New Caledonia, the Philippines, the U.S.S.R., Canada, Guatemala, Australia, Indonesia, the Dominican Republic and possibly Rhodesia. Canada's measured and indicated ore reserves of economically recoverable grade have been estimated at about six to seven million tons, equivalent to thirty years' supply at the current rate of output.(6)

- (1) The Financial Post, December 7th, 1968: Sudbury, A Feature Report.
- (2) Correspondence: C.J. Cajka, Canada Dept. of Energy, Mines & Resources
D.R. Lochhead, Vice-President, Falconbridge Nickel Mines Limited
R.R. Taylor, Vice-President, International Nickel Company of Canada Limited
- (3) Mineral Year Book - 1970. Canada Dept. of Energy, Mines & Resources
- (4) Richardson Securities of Canada, Research Department, 1968
- (5) Meadows D.L. et al - The Limits to Growth. A Report for The Club of Rome's Project on the Predicament of Mankind. Universe Books, N.Y. 1972
- (6) Canadian Business Service: The Nickel Industry, 1971

Canada's dominant position in the world will no doubt continue to decline as production in other nations increases (Figure P2) but there is as yet no clear indication that production in the Sudbury area will actually decrease in the foreseeable future.

Although the growth of consumption in the non-communist world has been remarkably uniform despite wars and recessions (1), industry experts are very reluctant to make even short-term projections of production in the Sudbury area. Geographic production diversification permits the major producers to satisfy the demand from whichever sources are currently most profitable.

The combination of increased demand and increased competition suggests that a gradually decreasing rate of expansion would be a prudent forecast for the Sudbury region's nickel industry. Some long-range studies made by industry and independent research teams have predicted that domestic production will increase at an average rate of 5% per annum (2), but recent developments have caused considerable re-evaluation and re-scheduling of expansion projects in Canada (3).

Both Falconbridge and International Nickel spokesmen have cautioned that the growth rate of the Sudbury mining industry in the last 20 years is not expected to continue in the future. The trend is already apparent during the period 1951-1971: most of the growth in Ontario occurred during the first half of this period. Annual production rose from 138 thousand tons to about 200 thousand tons between 1951 and 1961, but since that time the annual production has only occasionally exceeded 200 thousand tons. A growth trend is discernible after the severe slump in 1963, but does not appear as strong as the growth experienced in the early nineteen fifties.

Having regard to the above trends and the past growth rates documented in Table P-A, the following assumption has been adopted regarding the growth of nickel production in the Sudbury region:

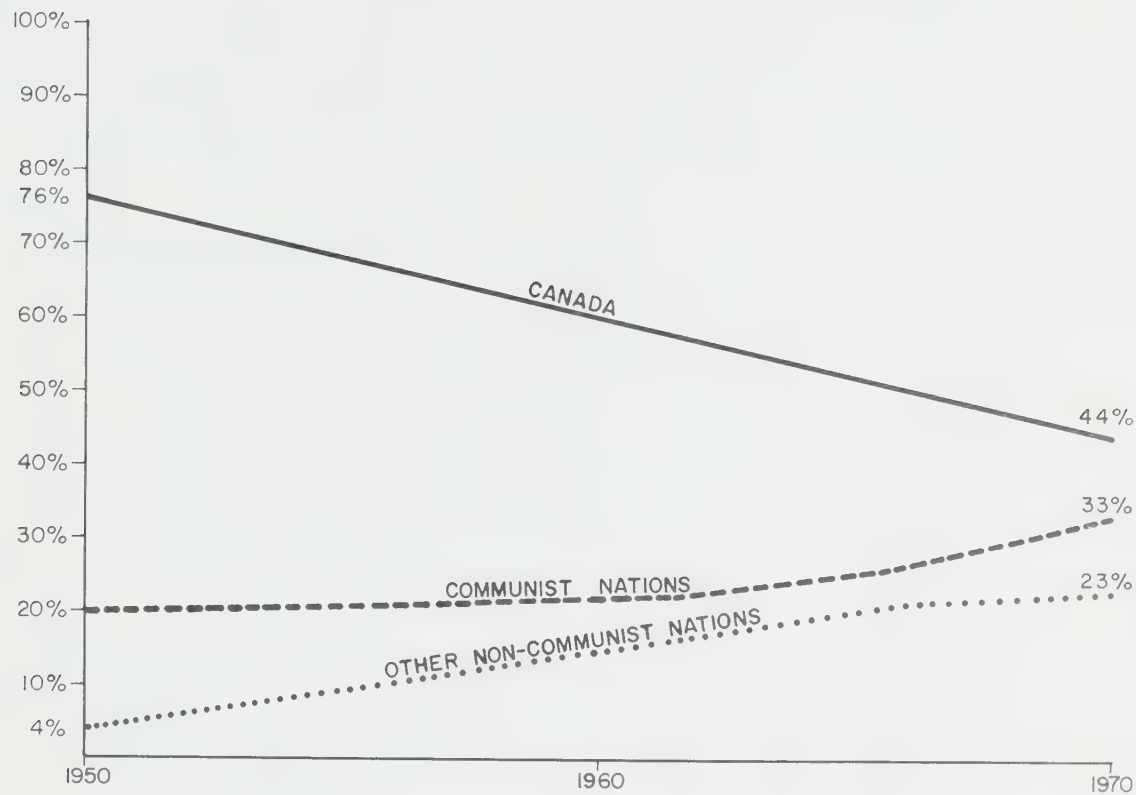
1972-1981	- 2 per cent
1982-1991	- 1½ per cent

Favourable overseas political developments could conceivably cause the major producers to rely more heavily on foreign sources and further curtail activities in the Sudbury basin; it is recognized that growth will depend largely on technical, global economic and political factors which are impossible to predict, but in the light of the known facts, the above assumption seems to be a reasonable broad projection of trends, adjusted by anticipated future developments.

- (1) Holm, E.H. The Nickel Industry, (Review & Projection) Aug.'72
- (2) Canadian Business Service: The Nickel Industry, 1971
- (3) The Canadian Mineral Industry in 1971, Mineral Resources Branch, Department of Energy, Mines & Resources, Ottawa, 1972.

FIGURE P2

PERCENTAGE DISTRIBUTION OF
WORLD NICKEL PRODUCTION
1950 - 1970



SOURCES

1. Canadian Business Service, (1971)
2. R. J. Shank (1971)
Mineral Resources Branch
Canada Department of Energy
Mines & Resources.

3. PROJECTED EMPLOYMENT IN THE SUDBURY AREA

(a) MINING EMPLOYMENT

"The mining industry is becoming increasingly capital intensive. As a result, employment is likely to increase at a slower rate than either volume or value of production." (1) The figures in Table P-B do not show this trend in the past but it seems nevertheless to be a valid prediction for future planning purposes.

The ratio of mining employment to production should be projected as decreasing over the year but trends provide no guide to the degree to which this change should be anticipated. Table P-C provides statistical evidence of a strong trend in mining employment toward a greater percentage of asalaried employees, which may reflect the effect of automation on the hourly-rated employees while specialized technical and administrative personnel have increased in numbers.

This is confirmed in a recent report of the Economic Council of Canada (2) which states that "production and related workers accounted for a smaller proportion of total employment in 1967 than in 1961, with the proportion of professional, technical, administrative and office workers being increased." It also points out that "the longer-run employment effects of mining activities are not great. Increasingly skilled manpower is, however, required. While there are considerable employment effects during the construction stages, the general increases in employment in mining are not likely to be very great."

Hodge and Wong, however, are somewhat more optimistic in predicting an increase in the volume of activities of the existing complex. "Not only can one expect a greater percentage of the mined ores to be milled, smelted or refined in the region, but also for ore to be imported from other areas." (e.g. from Manitoba)

For future planning purposes, a mining employment growth rate will be adopted which is slightly lower than the projected mining production forecast.

1972-1981	- 1½ percent
1982-1991	- 1 percent

(1) Design for Development: Northeastern Ontario Region, phase 1: Analysis p. 99, January 23, 1971.

(2) Dawson, J. Productivity Change in Canadian Mining Industries Economic Council of Canada, 1971.

TABLE P-C

SALARIED EMPLOYEES AND WAGE-EARNERS IN
NICKEL - COPPER MINING IN ONTARIO: 1951 - 1971

	<u>Salaried Employees</u>		<u>Wage - Earners</u>		<u>Total (1)</u>
	<u>Number</u>	<u>%</u>	<u>Number</u>	<u>%</u>	
1951	1,885	10.2	16,626	89.8	18,511
52	1,993	10.1	17,704	89.9	19,697
53	2,173	10.7	18,202	89.3	20,375
54	2,233	11.0	18,075	89.0	20,308
55	2,317	11.5	17,862	88.5	20,179
56	2,357	11.2	18,648	88.8	21,005
57	2,555	11.6	19,514	88.4	22,069
58	2,455	12.1	17,790	87.9	20,245
59	2,457	12.0	18,066	88.0	20,523
1960	2,653	12.0	19,442	88.0	22,095
61	2,724	12.3	19,420	87.7	22,144
62	2,733	13.2	18,032	86.8	20,765
63	2,680	13.8	16,798	86.2	19,478
64	2,750	15.0	15,640	85.0	18,390
65	3,051	13.4	19,678	86.6	22,729
66	3,356	14.4	19,913	85.6	23,269
67	3,822	15.9	20,243	84.1	24,065
68	4,210	16.8	20,805	83.2	25,015
69	4,856	20.7	18,644	79.3	23,500
1970	5,367	19.7	21,942	80.3	27,309
71	5,817	20.2	23,048	79.8	28,865

(1) Figures include employees at Werner Lake, Port Colborne, Lakefield and Thornhill, but not contracted employees.

Source: Annual Statistical Reports - Ontario Department of Mines.

(b) OTHER EMPLOYMENT

Figure P1 and Tables P-A and P-B indicate that population growth in the Sudbury area has outstripped the growth of the nickel industry. This cannot be attributed to the growth of other mineral production, such as copper or iron since these activities have not grown at a significantly higher rate than nickel. The continued high population growth rate must be explained largely by a growth in the service industry and commerce sector and in the institutional field. The Sudbury area appears to have matured by the acquisition of a wide variety of service, educational and recreational activities which can only be supported when a city reaches a certain size. During the period 1946-1969, manufacturing has grown at a rate comparable to the provincial average, but three quarters of this growth in Sudbury since 1946 has occurred prior to 1952 and cannot account for the continued population growth. (1) Between 1952 and 1969 the growth of manufacturing employment in the Sudbury District has been about 15% compared to a 42% growth of nickel production, a 49% growth of the District population and an 82% growth in the population of the Nickel Basin.

Economies of scale achieved with the size of the present Sudbury conglomeration are expected to encourage the establishment of supply industries in the Sudbury area, (2) but the prospects for export-generating or secondary processing industries are much less attractive.(3)

The services sector appears to have an excellent chance of continued growth. A growth rate of 3.0% per year has been projected for the tourist service sector in north-eastern Ontario, which should more than double the labour force in the tourist industry over the period 1961-1986. (2) This increase may be more significant in the less populated areas than in the Sudbury area and it may offer needed opportunities for the female labour force; for both these reasons the growth of tourism may not be a major factor in the future population growth of Sudbury.

Transportation, communications and utilities have in the past employed a significant proportion of the labour force (about 7%) but this percentage seems to be declining slightly and this sector is not likely to increase in importance.

- (1) Note: Manufacturing, as defined by Statistics Canada, includes the processing of mining ore. Much of the apparent growth of manufacturing is in fact part of the mining industry.
- (2) Design for Development; Northeastern Ontario Region, phase 1: Analysis p. 99, January 23, 1971.
- (3) Hodge and Wong, Opus cit.

The trade sector has in the past suffered from the restricted size of the market in Sudbury. This picture has changed with the high population growth and may be expected to continue improving as the population increase permits greater specialization, thereby encouraging Sudburians to purchase even luxury items in their home territory. As might be expected, the percentage of the labour force employed in trade is substantially higher in Sudbury itself (15.5%) than in any of the surrounding communities. (Levack 4%, Lively 6%, Capreol 7%, Copper Cliff 8%, Coniston 9%, Chelmsford 12%, 1961 figures)

Professional and personal services employment have also been growing faster than the rest of the labour force, in accordance with a province-wide trend. In the District of Sudbury this group grew from 15.3% of the labour force to 18.9% between 1951 and 1961.

SUMMARY

The following employment trends have been observed in the Sudbury area:

1. The growth of total employment has exceeded the growth of nickel industry and its employment.
2. Except for vigorous growth in the late nineteen forties, manufacturing has not grown significantly faster than mining in the Sudbury area and cannot account for the continued growth of employment in the last two decades.
3. The greatest areas of employment growth have been in the trade and service occupations.

Although certain sectors of the labour force are expected to continue to grow faster than mining, their potential as a source for continued population growth in excess of the growth generated by mining is limited. Sudbury's labour force composition now approximates the composition of similar-size cities in southern Ontario, except that mining in Sudbury replaces manufacturing in the other cities as the prime employment source.

Import substitute or supply industries may continue to be attracted by the growing scale of the Sudbury market and are probably the most likely source of continued non-mining employment.

However, if an additional major source of employment is to be found as an alternative to mining, it would probably have to be in secondary industry. Hodge and Wong (1) have shown that certain

(1) Hodge and Wong. opus cit.

industries associated with the non-ferrous metals industrial complex could justifiably be located in northern Ontario. These were: a copper and brass mill, a wire and cable plant, a cement plant, and non-ferrous foundries. Of the urban centres in the northeast, however, the Sudbury area was not found to have the highest potential for the output industries. Even if all these industries were to locate in the Sudbury area, the total number of new jobs, including community induced service employment, was estimated only at 1,600. Consequently, it seems likely that the rate of future employment growth will only marginally exceed the growth of mining employment.

The following rate of growth has been adopted for total employment projection:

1972 - 1981	-	1.75%
1982 - 1991	-	1.25%

4. THE PROJECTED FUTURE POPULATION OF THE SUDBURY AREA

(a) INTRODUCTION

Population projections for the Sudbury area have been produced from several sources in recent years. Three of these are reproduced in summary form for comparison with the projection resulting from our investigations.

(b) FIRST SOURCE

The Economic Analysis Branch of the Ontario Department of Treasury and Economics published population forecasts for the Province and for the census metropolitan areas in September of 1970. The material relevant to Sudbury is reproduced as Table P-D.

Earlier projections from the same source, produced in 1957 and in 1966, had tended to overestimate the population of the Sudbury Metropolitan area in 1971. Some significant aspects of the latest projection are as follows:

1. An immediate reduction is forecast in the 0-4 age group, which will result in a decreasing school age population from the present until about the year 1986. Although the total population is expected to grow considerably between 1971 and 1986, the number of people in the 5-19 age group will be smaller in 1986 than in 1971. The 5-19 age group is expected to continue decreasing as a percentage of the total population, throughout the period 1971-2001, although the most dramatic decrease is expected in the first ten years.
2. The percentage of persons over 50 is expected to increase sharply between 1971 and 1981 and to continue growing at a slower rate subsequently.
3. The relative size of the labour force age group is expected to grow somewhat during the initial ten years of the projection period and then stabilize at about 55%.

The first source projection is independent of the economic base and employment studies undertaken by the Sudbury Area Planning Study. It is recorded here as a check on our projections and as source material for the age composition of the future population.

(c) SECOND SOURCE

A second recent projection is reproduced from an Economic Survey of Sudbury prepared in 1967 by J. R. Winter, Assistant Professor

TABLE P-D

METRO SUDURY - POPULATION PROJECTION BY SEX AND BY 5-YEAR AGE GROUPS, 1966 - 2001

ASSUMPTION B-50,000

	Total	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70+
1966																
T	117,075	14,817	15,099	13,318	10,915	8,929	7,547	7,231	7,883	7,933	6,303	5,586	3,892	2,958	1,937	2,727
M	59,825	7,540	7,633	6,117	5,493	4,425	3,875	3,603	4,131	4,007	3,260	3,077	2,097	1,651	1,035	1,181
F	57,250	7,277	7,466	6,601	5,422	4,504	3,672	3,628	3,752	3,926	3,043	2,509	1,795	1,307	902	1,446
1971																
T	130,477	11,808	13,228	13,468	13,708	11,607	9,678	8,103	7,614	8,032	7,979	6,233	5,370	3,629	2,635	3,327
M	66,190	6,052	7,746	7,818	6,902	5,802	4,792	4,158	3,799	4,229	4,009	3,185	2,890	1,883	1,399	1,525
F	64,289	5,756	7,481	7,649	6,808	5,805	4,884	3,949	3,815	3,863	3,969	3,048	2,479	1,747	1,240	1,802
1976																
T	144,079	12,544	12,202	15,601	15,914	14,506	12,293	10,144	8,472	7,837	8,150	7,887	6,006	4,983	3,238	4,300
M	72,627	6,433	6,253	7,931	8,026	7,255	6,152	5,023	4,341	3,905	4,236	3,919	2,999	2,588	1,995	1,961
F	71,454	6,114	5,951	7,668	7,888	7,249	6,142	5,121	4,133	3,933	3,911	3,967	3,006	2,393	1,641	2,338
1981																
T	159,492	15,054	12,923	12,544	16,054	16,766	15,222	12,725	10,465	8,669	7,907	8,068	7,602	5,593	4,433	5,470
M	79,965	7,719	6,623	6,422	8,144	8,406	7,622	6,368	5,183	4,431	3,922	4,148	3,696	2,686	2,193	2,394
F	79,526	7,335	6,301	6,118	7,912	8,359	7,599	6,354	5,280	4,236	3,983	3,921	3,906	2,909	2,242	3,076
1986																
T	175,889	16,841	15,425	13,246	12,978	16,923	17,516	15,666	13,025	10,622	8,708	7,834	7,778	7,080	5,002	7,242
M	87,801	8,637	7,905	6,784	6,626	8,529	8,788	7,845	6,521	5,254	4,429	3,841	3,911	3,321	2,289	3,116
F	88,088	8,204	7,517	6,462	6,354	8,395	8,728	7,821	6,503	5,366	4,280	3,996	3,867	3,758	2,712	4,125
1991																
T	191,806	17,207	17,220	15,746	13,661	13,836	17,687	17,981	15,976	13,158	10,619	8,603	7,566	7,243	6,335	8,962
M	95,411	8,826	8,827	8,066	6,973	7,007	8,917	9,020	8,004	6,579	5,229	4,324	3,627	3,518	2,824	3,660
F	96,395	8,380	8,392	7,679	6,688	6,830	8,770	8,960	7,974	6,578	5,389	4,277	3,939	3,725	3,510	5,303
1996																
T	206,656	17,026	17,596	17,544	16,163	14,515	14,592	18,166	18,307	16,107	13,115	10,456	8,287	7,064	6,478	11,243
M	102,528	8,735	9,023	8,990	8,256	7,354	7,390	9,156	9,185	8,058	6,529	5,094	4,080	3,268	2,994	4,409
F	104,128	8,290	8,573	8,554	7,905	7,160	7,201	9,010	9,124	8,047	6,587	5,361	4,210	3,796	3,481	6,833
2001																
T	220,993	17,437	17,424	17,924	17,963	17,012	15,266	15,070	18,506	18,443	16,039	12,878	10,048	7,722	6,337	12,924
M	109,446	8,948	8,936	9,189	9,182	8,632	7,738	7,633	9,330	9,245	7,993	6,346	4,794	3,674	2,789	5,021
F	111,546	8,491	8,487	8,738	8,782	8,377	7,530	7,436	9,175	9,200	8,046	6,531	5,255	4,049	3,550	7,904

NOTE: Due to rounding, figures may not add to total.

SOURCE: Economic Analysis Branch, Economic and Statistical Services Division, Department of Treasury and Economics, May, 1970.

of Economics at Laurentian University (1). Professor Winter's projections apply respectively to the 1961 Census Metropolitan Area and to the area within the boundaries of the City of Sudbury in 1967. (Table P-E) In contrast with the First Source projections, it appears in 1972 that Professor Winter has tended to underestimate the growth of the Sudbury area. Substantial recent capital investment by the International Nickel Company seems to have created an unexpectedly high employment in the construction industry, which may explain why the population growth has continued at a higher rate than predicted by Professor Winter. Over a longer period, the actual growth could approximate Professor Winter's projection more closely.

(d) THIRD SOURCE

The Ontario Housing Corporation prepared a population projection as part of a Sudbury Housing Market analysis published in 1968. Table P-F summarizes the population projections of that report. It is noted that in 1971 these projections were high for the City of Sudbury but essentially correct for the Nickel Basin. (2)

Growth of the Nickel Basin between 1971 and 1981 has been estimated at a rate of 2.3%, with the caution that the forecast is based on the assumption that the mined products of the area will maintain their competitive position in world markets.

(e) THE SUDBURY AREA PLANNING STUDY'S PROJECTION

The fourth source for a population projection is from our own studies relating population to employment and the economic base.

The forecasting of future population growth must be clearly understood to be at best an informed judgement rather than a scientific projection. Studies of past trends are useful as background information to assist in determining the factors which will affect future population growth. A simple projection of trends can be made with mathematical precision but such a projection can nevertheless be very far off the mark. Actual growth will be determined by birth and death rates, migration patterns and particularly by economic factors affecting employment opportunities. In an economy dominated by two large employers, the plans of these two corporations are the single largest factors determining employment opportunities. The degree to which non-industrial growth can continue to influence population growth is limited. If substantial industry other than mining is established in the region, further additional population growth could be expected but the available evidence does not suggest such an assumption. Consequently, the future population of the Sudbury area is projected in this study as a direct reflection of the gross estimate made for mining employment.

(1) Winter, J. R., Sudbury - An Economic Survey, published by The Sudbury and District Industrial Commission and Laurentian University Press, 1967.

(2) Note: The definition of Nickel Basin differs in the O.H.C. Study from the definition adopted in the Nickel Basin Planning Study. Consequently the population figure is different, but the projected growth rate of 2.8% has turned out to be correct.

Our estimate is in general agreement with the estimates made by the three earlier sources in that all three projections show a marked decline in the population growth rate. Whereas growth rates prior to 1961 have generally fluctuated between 3% and 6% per year, the rate in the last decade has been about 2% and a further gradual decline in the rate of growth is assumed in all estimates, except the Ontario Housing Corporation's, which projects a growth rate in the nineteen seventies approximately equal to the average growth rate of the sixties.

TABLE P-E
POPULATION PROJECTION BY J. R. WINTER (1967)⁽¹⁾

<u>YEAR</u>	<u>METRO SUDBURY</u>	<u>SUDBURY</u> ⁽²⁾
1966	116,101	83,303
1968	120,155	85,266
1970	124,070	87,031
1972	127,847	88,598
1974	131,486	91,138
1976	134,987	91,138
1978	138,350	92,112
1980	141,575	92,887

(1) Winter, J.R., opus cit.

(2) "Sudbury" means the area within the 1967 boundaries of the city.

AVERAGE ANNUAL RATE OF GROWTH (Based on above figures)

<u>YEAR</u>	<u>METRO SUDBURY</u>	<u>SUDBURY</u>
1966-1970	1.7%	1.1%
1970-1980	1.3%	0.6%

TABLE P-F

ONTARIO HOUSING CORPORATION

POPULATION PROJECTIONS

NICKEL BASIN AREA

1966-81

	1966	1971	1976	1981	<u>Average Annual Rate of Growth</u>	
	No.	No.	No.	No.	1966-71	1971-81
City of Sudbury	84,888	96,300	105,300	115,000	2.5	1.8
Nickel Basin Area, excl. city	54,089	63,500	73,700	85,000	3.2	3.0
Nickel Basin Area	138,977	159,800	179,000	200,000	2.8	2.3

TABLE P-G

AVERAGE ANNUAL RATE OF GROWTH 1901-1971

	<u>NICKEL BASIN POPULATION</u>
1901-1911	5.8%
1911-1921	3.5%
1921-1931	4.8%
1931-1941	4.8%
1941-1946	2.9%
1946-1951	4.2%
1951-1956	6.3%
1956-1961	3.5%
1961-1966	1.4%
1966-1971	2.8%

TABLE P-H

PROJECTED POPULATION GROWTH

REGIONAL MUNICIPALITY OF SUDBURY

	<u>Population</u>	<u>Average Annual Growth Rate</u>
1972	167,458	
1982	199,100	1.75%
1992	225,500	1.25%

5. DISTRIBUTION OF POPULATION GROWTH

The population projection described in the previous subsections was based on the premise that the Sudbury area is a single community from the point of view of employment opportunities. No attempt was made to relate the location of future population growth to the spatial distribution of job opportunities. It is intended that the study of the supply of urban land provide a basic indication of where population growth should occur. A knowledge of existing patterns and trends is nevertheless very valuable as background to consideration of future patterns of growth.

Figure I15 in Schedule 'B' gives a picture of the relationship between the location of employment and domicile for the mining labour force. It suggests quite a strong relationship between the place of work and the choice of a place to live but the existing pattern is strongly influenced by the existence of company towns. If the mining companies continue to divest themselves of their residential real estate, that relationship could be much weaker in the future. Figure P3 herein shows the distribution of population growth in the period 1961-1971. Although a substantial proportion of the numerical growth has occurred in the City of Sudbury, the rate of growth has been much higher in the Valley and some of the unorganized townships than in the City, Table P-I documents the trend toward growth in the outlying areas and Table P-J provides more detailed statistics on the distribution of growth during the same period.

TABLE P-I

SUDBURY AREA GROWTH RATES 1951-1971

	1951-1961	1961-1966	1966-1971
Sudbury City	3.4%	1.2%	1.3%
Metro Sudbury	3.8%	1.6%	2.0%
Nickel Basin	4.9%	1.4%	2.8%
Sudbury Region	4.6%	1.4%	2.7%

The highest growth rates in the period 1951-1971 have not only been outside the City, they have occurred outside the Census Metropolitan Area (Metro Sudbury). This trend has been specially strong since 1966: the growth rate of the City has barely increased since the slow period in the early sixties, whereas the remainder of the Sudbury area has shown a marked increase, particularly outside Metro Sudbury.

The existing population distribution is illustrated on Figure P4. Each dot represents 250 persons, either concentrated in one area or dispersed in the general vicinity of the dot.

POPULATION GROWTH 1961-1971



TABLE P-J
POPULATION GROWTH
AND AVERAGE ANNUAL
RATE OF GROWTH
SUDBURY REGION AND COMPONENTS

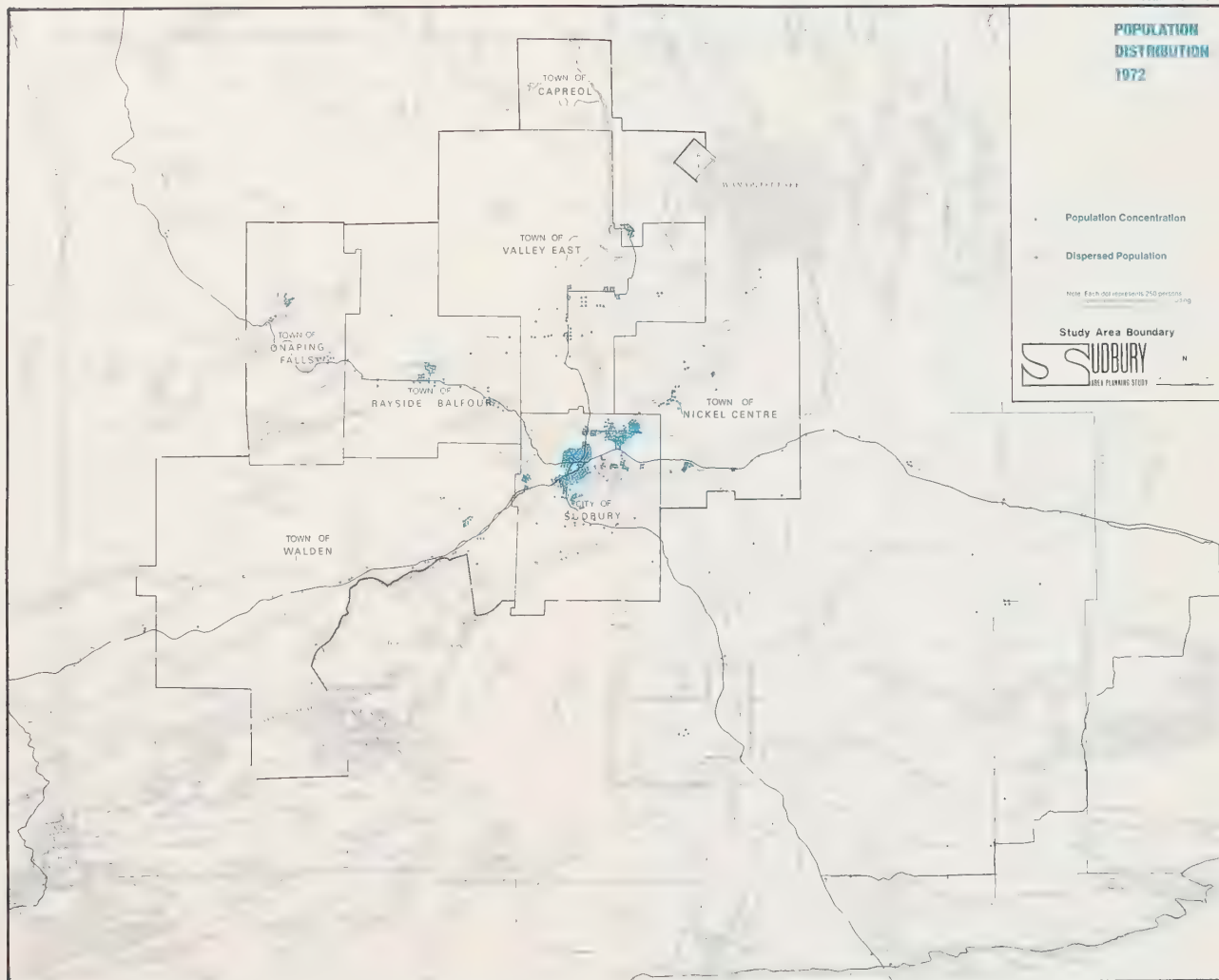
	1951 - 1961		1961 - 1966		1966 - 1971	
	ABSOLUTE	A.A.R.	ABSOLUTE	A.A.R.	ABSOLUTE	A.A.R.
CITY OF SUDBURY incl. McKIM Twp. & W $\frac{1}{2}$ of NEELON Twp. & FROOD MINE	22,989	3.4%	4,768	1.2%	5,647	1.3%
Twp. of BRODER	2,021	13.1%	510	3.2%	1,119	5.9%
Town of COPPER CLIFF	-374	-1.0%	-95	-0.5%	584	3.1%
Pt. of DILL Twp.	384	14.5%	28	1.1%	666	17.3%
SUDBURY 1971 Pop.: 100,321	25,020	3.4%	5,211	1.2%	8,016	1.7%
RAYSIDE Twp. incl. Pt. SNIDER	3,463	13.5%	671	2.6%	853	2.9%
BALFOUR Twp. incl. CHELMSFORD & Pt. MORGAN	2,601	8.7%	631	2.6%	3,846	11.6%
RAYSIDE - BALFOUR 1971 Pop.: 15,432	6,064	10.8%	1,302	2.6%	4,699	7.5%
Town of LEVACK	1,345	5.7%	-153	-1.0%	-77	-0.6%
LEVACK Twp.	20	7.4%	--	--	(1)	0.5%
DOWLING Twp. & FAIRBANK /N.Pt.	1,074	14.0%	455	5.6%	1,122	9.7%
Improvement Distr. of ONAPING	1,106	Distr. establ. Jan.1/56	111	1.9%	275	4.2%
ONAPING FALLS 1971 Pop.: 7,508	3,545	10.0%	413	3.8%	1,321	4.0%
Town of LIVELY* *(Establ. Jan.1/53)	1,008*	3.8%*	-42	-0.3%	-169	-1.1%
DRURY, DENISON & GRAHAM	1,019	8.4%	204	2.1%	366	2.9%
WATERS Twp.	1,073	7.6%	421	3.8%	451	3.4%
DIEPPE, LORNE, LOUISE	240	3.5%	13	0.3%	289	6.1%
Pt. TRILL, HYMAN, FAIRBANK, CREIGHT- TON, SNIDER and DOWLING *(All fi- gures approximate)	-430	-2.2%	-261	-3.3%	-158	-2.3%
WALDEN 1971 Pop.: 10,796	2,910	3.6%	335	0.6%	779	1.5%
Town of CAPREOL	1,001	4.2%	89	0.6%	378	2.3%
HUTTON Twp.	-8	-8.8%	1	3.1%	-5	-28.5%
NORMAN Twp.	145	3.5%	15	0.6%	-4	-0.2%
CAPREOL 1971 Pop.: 3,994	1,138	4.0%	105	0.7%	369	2.0%
Town of CONISTON	400	1.6%	--	--	215	1.5%
FALCONBRIDGE Twp.	283	2.4%	-110	-1.7%	29	0.5%
NEELON & GARSON Twp. (E $\frac{1}{2}$ of NEE- LON)	1,786	4.2%	117	0.4%	893	3.1%
MacLENNAN Twp.	-32	-0.8%	31	1.5%	235	9.0%
Pt. of DRYDEN Twp.	602	7.9%	42	0.7%	610	8.7%
NICKEL CENTRE - 1971 Pop.: 12,932	3,039	3.3%	80	0.1%	1,982	3.4%
Pt. LUMSDEN	-4	-3.4%	-10	--	--	--
VALLEY EAST	8,407	15.6%	2,766	4.6%	4,201	5.5%
VALLEY EAST 1971 Pop.: 17,937	8,403	15.6%	2,756	4.6%	4,201	5.5%
Regional Municipa- lity of SUDBURY - 1971 Pop.: 168,920	50,119	4.6%	10,202	1.4%	21,367	2.7%
District of SUD- BURY - 1971 Pop.: 198,080	56,272	4.2%	8,240	1.0%	23,978	2.6%
Province of ONTARIO - 1971 Pop.: 7,703,106	1,638,592	3.1%	724,778	2.2%	742,236	2.1%

POPULATION DISTRIBUTION 1972

- Population Concentration
- Dispersed Population

Note: Each dot represents 250 persons
(Source: Statistics Canada)

Study Area Boundary



SECTION II

EXISTING LAND USE

FIGURES

E1	Existing Land Use - 1972. (in a pocket at the end of this Schedule)	
E2	Distribution of Dwellings - 1972.	following page 26

TABLES

	Page
E-A	Land Use Relationships - Bartholomew 27
E-B	Urban Land Use in Cities Between 50,000 and 150,000 28
E-C	"Typical" Ontario Land Use Relationships 29
E-D	Existing Land Use, 1972, City of Sudbury 31
E-E	Existing Land Use, 1961, Town of Capreol 33
E-F	Existing Land Use, 1972, Town of Levack 34
E-G	Existing Land Use, 1972, Town of Lively 35
E-H	Existing Land Use, 1968, Township of Blezard 36
E-I	Existing Land Use, 1972, Township of Dryden 37
E-J	Existing Land Use, 1972, Township of Dill 38

SECTION II EXISTING LAND USE

I. INTRODUCTION

The general pattern of land use in the Study Area is shown in Figure E1. (1) The settlement pattern can be described as consisting of one central city surrounded by several small towns and areas of scattered development. Numerous mines are located in the Nickel Basin, primarily along its rim, and seasonal residences or "camps" are built around many of the lakes throughout the area. Farming is diminishing and is often difficult to identify separately from residential use with agriculture as a secondary occupation of the resident. Many farms appear to be occupied by persons who normally are employed off the farm, but also engage in small-scale farming activities. Figure E2 shows the distribution of dwellings in the Study Area. The number of farms, permanent dwellings and seasonal dwellings recorded in each township can differ depending on the definition adopted and the interpretation of the individual compiling the information. The figures shown represent an estimate based on conflicting information from several different sources.

For the purpose of deciding on an appropriate density of development for calculating future land use requirements, it is desirable to know at what density the existing development in the region has occurred. A study of the density of existing development has been undertaken for this purpose. It is not comprehensive, because up-to-date detailed land use information was not available for all areas and such detailed surveys were not deemed justified for regional planning purposes, but surveys were undertaken in sample areas where necessary.

Statistics showing the percentage of the total area of a municipality devoted to various uses are of limited interest, since they only clearly show how much of a municipality is built up and how much is still vacant or agricultural. It is important to know the proportions of the various types of developed land, particularly for the purpose of comparing different areas and arriving at projections of needs for future development.

Statistics relating to total developed area have therefore been produced in order that the amount of vacant or agricultural land within a municipal boundary should not distort the relationships between residential, commercial, industrial, institutional, and recreational lands or the population density characteristics. Two density figures have been calculated: net residential density (persons per net acre, p.p.n.a.) and gross urban density (persons per gross acre, p.p.g.a.)

(1) Figure E1 is located in a pocket at the end of this Schedule.

Net residential density relates population to the area of residential land, i.e. the total area of all the residential lots. It is also quite common in planning studies to relate population to a residential area which includes the local streets, but for our definition streets are excluded.

Gross urban density relates population to all the developed land including the roads adjacent to urban use.

It was felt that three different types of urban development could be identified in terms of scale: the central city, the towns and the semi-urban places. Samples of each of these types of development were studied for the purpose of arriving at density figures descriptive of their type in the Sudbury Area.

2. GENERAL STANDARDS FOR LAND USE RELATIONSHIPS

Various studies are available documenting land use relationships in urban areas. These studies are valuable for comparison with statistics of the existing development of the Sudbury Area and as a guide in establishing standards for future development. Tables E-A and E-B summarize statistics from American sources and Table E-C shows the application of a recent Ontario study which produced land use models based on an analysis of information from fifty-two urban municipalities in the province of Ontario.

The two American studies are in quite close agreement on the percentage of commercial land, railroad land, parks and playgrounds, and industrial lands occupied by streets in central cities of the size of Sudbury. They differ slightly on the percentages of residential land and lands occupied by public or semi-public uses.

The Ontario study describes gross areas which include abutting streets. Since streets comprise about 33% of the land area of a city, an adjustment is clearly necessary before the percentages can be compared. Net areas have been calculated by reducing each gross area a proportional amount to allow for a net developed area equal to 67% of the gross area. The correlation between the Ontario statistics and the two other sources thereby becomes quite good, the differences probably being due in most cases largely to different interpretations of the use definitions. The only major difference occurs in comparing the percentages for small satellite towns. The Ontario study shows a far higher percentage of residential land than Bartholomew, whereas the latter shows a very high percentage of public or semi-public land.

DISTRIBUTION OF DWELLINGS—1972

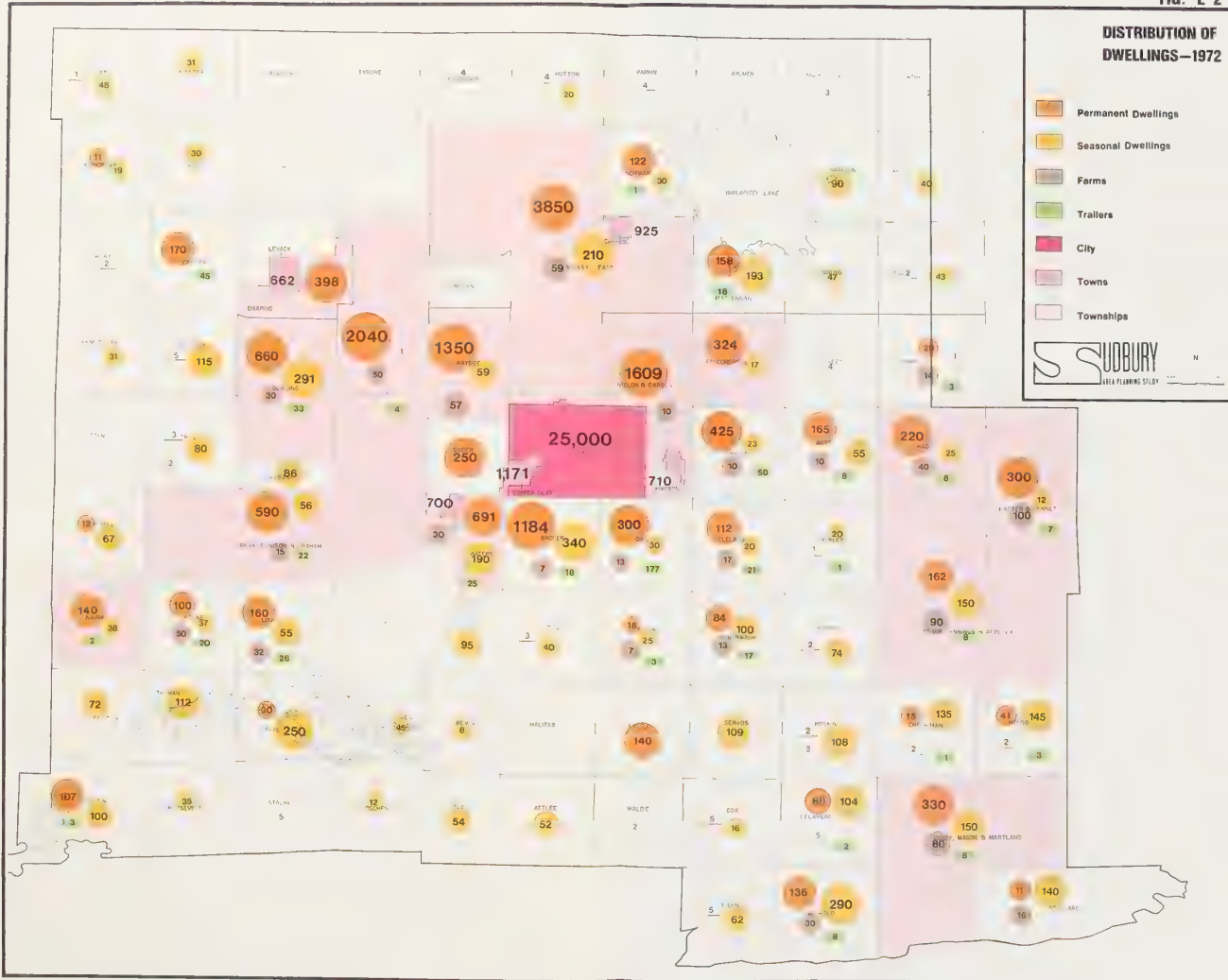


TABLE E-A

LAND USE RELATIONSHIPS - BARTHOLOMEW (1)

	CENTRAL CITIES 50,000 - 100,000		SATELLITE CITIES Under 5,000		URBAN AREAS (2) 7,000 - 120,000	
	Percent of Developed Area	Acres Per 100 Persons	Percent of Developed Area	Acres per 100 Persons	Percent of Developed Area	Acres Per 100 Persons
Residential	37.2		27.5		28.0	
single-family dwellings	30.9	2.48	26.4	7.13	25.1	3.72
two-family dwellings	4.1	0.33	0.9	0.25	1.6	0.24
multiples	2.1	0.17	0.2	0.04	1.3	0.20
Commercial	2.6	0.21		3.0	2.7	0.39
Industrial	4.8	0.38		6.6	5.6	0.84
Railroads	4.9	0.39		4.5	6.2	0.92
Parks, Playgrounds	6.5	0.52		3.0	4.6	0.68
Public, Semi-Public	10.8	0.87		22.9	25.3	3.75
Streets	33.3	2.66		32.6	27.6	4.10
	100.0	8.01	100.0	27.0	100.0	14.84
Gross Density	12 p.p.g.a.		3.7 p.p.g.a.		6.7 p.p.g.a.	

(1) Source: Bartholomew, Harland. Land Uses in American Cities, Harvard University Press, 1955.

(2) "Urban Areas" includes a central city, any satellite community and all developed area within the urban fringe.

(3) Public and semi-public includes airports, schools, cemeteries and institutional uses.

TABLE E-B
URBAN LAND USE
IN CITIES BETWEEN 50,000 AND 150,000 (1)

	Percent of Developed Area	
Residential	40.1	
single-family dwellings		35.4
two-family dwellings		3.2
multiple-family dwellings		1.5
Commercial	2.5	
Industrial	5.7	
Parks and Playgrounds	6.4	
Public and Semi-Public	7.6	
Railroads	4.8	
Streets	32.9	
Total Developed Area	100.0	

(1) Source: A.S.P.O. Planning Advisory Service, Information Report
No. 14, May 1950

TABLE E-C

"TYPICAL" ONTARIO LAND USE RELATIONSHIPS (1)

Size of Town or City	Residential Area		Commercial Area		Industrial Area (3)		Other Areas (4)		Total Developed Area	
	Acres (2)	Percent	Acres (2)	Percent	Acres (2)	Percent	Acres (2)	Percent	Acres (2)	Percent
90,000 Gross	4,300	54.6	378	4.8	1,521	19.3	1,672	21.2	7,871	100
(Sudbury) Net	2,880	36.6	253	3.2	1,018	12.9	1,120	14.2	5,271	67
4,000 Gross	312	56.2	33	5.9	82	14.8	128	23.0	555	100
(Copper Cliff) Net	209	37.6	22	3.9	55	9.9	86	15.4	372	67
3,500 Gross	271	56.1	29	6.0	70	14.5	113	23.4	483	100
(Capreol) Net	181	37.6	19	4.0	47	9.7	76	15.7	323	67
3,000 Gross	240	56.3	25	6.0	61	14.3	100	23.5	426	100
(Lively) Net	161	37.7	17	4.0	41	9.6	67	15.7	286	67
2,900 Gross	234	56.4	25	6.0	59	14.2	97	23.4	415	100
(Coniston) Net	157	37.7	17	4.0	39	9.0	65	15.7	278	67

(1) Calculated from land use models contained in "Urban Land Use in Ontario" Department of Municipal Affairs, 1968.

(2) Gross acres include abutting street. Net area is assumed to be 67% of gross area.

(3) Industrial includes airports, expressways, railways, utilities, warehouses and manufacturing.

(4) Other areas includes institutional, parks and public open space lands.

3. A COMPARISON OF SUDBURY AREA STATISTICS WITH TYPICAL STANDARDS

(a) THE CITY OF SUDBURY

A recent study by the City of Sudbury Planning Board (1) provides detailed up-to-date statistics on the land use in the City of Sudbury. (Table E-D) Even in the regional city, only about one quarter of the total area is developed.

The amount of vacant land within the 1972 boundaries is exceptionally high and is easily explained by the extremely rocky nature of much of the terrain. In Sudbury, some three quarters of the land area is undeveloped whereas other studies have shown that most cities have more than half of their land area developed (2). This statistic has relatively little meaning because it can change overnight by an amalgamation or annexation. It is more valuable to compare statistics relating to developed land. The total developed area occupied by the City of Sudbury is slightly higher than the Ontario norm for a city of 90,000 persons.

Sudbury's residential land comprises 37.5% of the total developed land area. This is very similar to the typical ratio described by Bartholomew (Table E-A) and in the A.S.P.O. report on Urban Land Use (Table E-B). It is not possible to compare the Sudbury statistics with the Ontario norm, except by first distributing the rights of way among the other land uses, because the Ontario study included roads within the other categories. Sudbury's figure of 26.2% for the area of developed land used for rights-of-way is somewhat less than average. It represents only streets and highways, since railways were classified as industrial. If the area of the rights-of-way is distributed among the various lands uses, it is found that Sudbury has slightly less residential land than the norm for a city of 90,000 people. The distribution of housing types seems weighted toward single-family dwellings and multiple-family dwellings, with a relative dearth of two-family units.

The area described as commercial is very much larger in Sudbury than in any of the comparative studies (9.1% of developed land). When read together with the low ratio of commercial land in the surrounding towns, this indicates a strong regional orientation toward the central city for commercial purposes. Parks and public open space, public and institutional uses occupy 16.5% of the developed area. This is quite similar to the ratios typical of other cities (17.3% in Bartholomew and 14% in A.S.P.O.)

According to American sources, industrial lands and railroads occupy typically about 10% of the developed area of a city. The figures for the City of Sudbury approximate this norm. The Ontario study records a somewhat higher ratio of industrial land to total developed area for a city of Sudbury's size (12.9%). It seems reasonable to expect a low ratio of industrial land in Sudbury, since much of the mining employment is located outside the 1972 city boundary.

(1) Wu, Franklin, Inventory of Land Use, City of Sudbury, 1972, A summer project sponsored by the Sudbury Planning Board.

(2) Bartholomew, Harland. opus. cit.

TABLE E-D

EXISTING LAND USE 1972CITY OF SUDBURY

Land Use Type	Acres	Percent of Developed area
<hr/>		
Residential	3,085	37.5
single-family	2,702	32.9
two-family	74	0.9
multiple-family	308	3.7
Commercial	749	9.1
Industrial (including railways)	436	5.3
Mining Industrial	443	5.4
Educational	653	7.9
Community Buildings	101	1.2
Recreational (open space)	611	7.4
Streets and roads	2,155	26.2
<hr/>		
Total developed area	8,232	100.0
Agricultural or vacant	24,461	
<hr/>		
Population:		90,535
Net Residential Density:		29.4 p.p.n.a.
Gross Urban Density:		11.0 p.p.n.a.

Source: Inventory of Land Use, City of Sudbury, 1972.
Sudbury Planning Board.

(b) THE TOWNS

Several of the urban communities surrounding the central city can be described as towns, regardless of their actual municipal status. This group includes such places as Capreol, Lively, Coniston, Levack, Chelmsford, Garson and Azilda.

Detailed land use surveys have been completed relatively recently in Capreol (1971), Levack (1972), and Lively (1972) and their statistics are reproduced as Tables E-E, E-F, and E-G. These are fairly typical of the built-up urban settlements developed on full piped water and sewer services.

The various small towns in the region are characterized by a relative absence of industrial land. The statistics for Capreol are deceptive because of the apparently large industrial area which is in fact railway land. The major source of employment, mining, is in many cases not located within the municipal boundary of the town (prior to 1972). Unlike the small "satellite cities" described by Bartholomew (Table E-A), which have a much lower density than the central city, net residential densities in the towns around Sudbury approximate typical urban density characteristics and are not very different from the density characteristics of the City of Sudbury.

Capreol's commercial area is fairly standard in size, but the other towns tend to be very underdeveloped in this sector, emphasizing the dependence on the central city.

(c) THE SEMI-URBAN AREAS

The remaining development has occurred in various forms of scattered settlement. Some of this scattered development has been so intense that it has become almost urban in character. The spatial limitations imposed by the costs of providing piped services to these areas are further emphasizing their urban density characteristics and places like Hanmer and Blezard are developing into suburban settlements. Table E-H illustrates the land use acreage characteristics of Blezard Township in 1968 as recorded in a draft Official Plan appendix. Gross development density is difficult to define because roads take up a disproportionate amount of the total land area, serving both the semi-urban areas and the undeveloped areas. If all streets and highways were included as part of the gross developed area, the gross density would be about 5.5 persons per acre. By excluding the provincial highways, a more realistic estimate of gross density is obtained at 6.2 p.p.g.a.

Dill and Dryden Townships are examples of recent ex-urban growth, much of it scattered. The settlement of Wanapitae in Dryden Township is a compact urban place with a recognizable centre. Its density characteristics are examined separately from the rest of the Township in Table E-I.

Development in the semi-urban areas is not conveniently conveniently comparable to any standard. Dill Township, which has almost no urban focus, has a net residential density of 13.5 persons per acre. (Table E-J). Dryden Township, with half its population concentrated in a distinct focus in Wanapitei, has a density of 16.4 persons per acre; Blezard Township, with a substantial amount of relatively compact development, has a net density of 17.2 persons per acre.

Statistics are also available for other parts of the Study Area but since they combine urban areas with a surrounding rural area, these statistics are of limited use as a guide for land use projection. Net residential density of the unserviced permanent development in the Waters-Whitefish Planning Area has been calculated to be 4,337 persons divided by 343 acres, or 12.6 persons per net acre.

TABLE E-E
EXISTING LAND USE 1971
TOWN OF CAPREOL

Land Use Type	Acres	Percent of Developed Land
Residential	157	34.5
Commercial	11	2.4
Industrial	108	23.7
Public & Institutional	75	16.5
Park & Open Space	25	5.5
Roads	80	17.6
Undeveloped Land	1,044	----
<hr/>		
Total	1,500	
Total developed area	456	100.0
<hr/>		
Population:		3,470
Net Residential Density:		22.1 p.p.n.a.
Gross Urban Density:		7.6 p.p.g.a.

Source: Draft Official Plan (1972)
Town of Capreol Planning Area

TABLE E-F

EXISTING LAND USE 1972TOWN OF LEVACK

Land Use Type	Acres	Percent of Developed Land
Residential	76.3	40.6%
Commercial	2.8	1.5
Industrial	2.7	1.4
Institutional	24.5	13.0
Utilities	2.7	1.4
Transportation and Communication		
- Streets	44.2	23.5
- Highway	4.4	2.3
- Railway (Inco)	7.0	3.7
Public Open Space	6.7	3.6
Vacant lots	16.6	8.8
Total Developed Area	187.9	100%

Population: 2,948
Net residential density: 38.8 p.p.n.a.
Gross urban density: 15.7 p.p.g.a.

Source: Sudbury Area Planning Study, from Land Use Mapping
supplied by Nickel Basin Realty

TABLE E-G

EXISTING LAND USE 1972TOWN OF LIVELY

Land Use Type	Acres	Percent of Developed Land
Residential	108.8	52.0%
Commercial	2.1	1.0
Industrial	---	---
Public & Institutional	26.8	12.8
Recreational & Open Space	11.5	5.5
Utilities	2.9	1.4
Roads, Highway	49.8	23.8
Vacant Lots	7.2	3.4
Total Developed Area	209.1	100%

Population:	3,000
Net Residential Density:	27.6 p.p.n.a.
Gross Urban Density:	14.4 p.p.g.a.

Source: Sudbury Area Planning Study Land Use Survey

TABLE E-H
EXISTING LAND USE 1968
TOWNSHIP OF BLEZARD

Land Use Type	Acres	Percent of Developed Area
Residential		
Permanent	313.0	36.1
Seasonal	19.2	2.2
Commercial	16.6	1.9
Industrial	53.0	6.1
Public and Semi-Public	117.9	13.6
Utilities	59.4	6.9
Open Space		
Recreational Uses	35.8	4.1
Cemeteries	3.0	0.4
Streets and Roads	248.0	28.6
Total Developed Area	865.9	100.0
Highways	121.2	
Farmland, Vacant Land and Water	21,896.0	

Population: 5,400
Net Residential Density: $5,400 \div 313 = 17.2$ p.p.n.a.
Gross Development Density: $5,400 \div 866 = 6.2$ p.p.g.a.

Source: Draft Official Plan, Blezard Planning Area, prepared by
Sawchuk & Peach, Architect-Planners.

TABLE E-I
EXISTING LAND USE 1972
TOWNSHIP OF DRYDEN

Land Use Type	Dryden Acres	Twp. Percent	Hamlet of Wahnapitei Acres	Percent	Twp. Excluding Hamlet Acres	Percent (1)
Residential						
single family	92.7	13.3%	51.9	40.3%	40.8	44.9%
two family	0.2	0.03	0.2	0.2	--	--
mobile homes	22.9	3.3	8.3	6.4	14.6	16.1
Commercial	14.3	2.0	4.2	3.3	10.1	11.1
Industrial						
Extractive/Mining	19.9	2.8	0.5	0.4	19.4	21.3
Utilities	9.0	1.3	7.0	5.4	2.0	2.2
Institutional	9.2	1.3	5.2	4.0	4.0	4.4
Transportation, Communications						
Streets, Hwys.	390.4	55.9	40.3	31.3		
Railways	9.6	1.4	8.7	6.8		
Linear Utilities	128.2	18.3	--	--		
Open Space - Public	2.4	0.3	2.4	1.9	--	--
Total Developed Land	698.8	100.0	128.7	100.0	90.9	100.0
Transp. Commun. (rest of twp.)						
Streets, Hwys.					350.1	1.5
Railways					0.9	--
Linear Utilities					128.2	0.6
Vacant or Agricultural	22,851.2	97.0			22,344.9	97.5
Total Area	23,550.0	100.0			22,915.0	100.0
Developed Land as Percent of Total Area		3.0%			90.9	0.4%

Population: 1,900

Net Residential Density: $1900 \div 115.8 = 16.4$
p.p.n.a.

(1) The total developed area quoted in the rural areas excludes roads.

Source: Sudbury Area Planning Study Land Use Survey

TABLE E-J
EXISTING LAND USE 1972

TOWNSHIP OF DILL

Land Use Type	Acres	Percent of Developed Land
Residential		31.3
single family residential	97.6	19.8
mobile homes	25.0	5.1
Trailer parks	7.0	1.4
seasonal dwellings	24.6	5.0
Commercial	38.6	7.8
Industrial		
Extractive/mining	119.8	24.3
Utilities	7.6	1.5
Institutional	71.2	14.4
Open space		
public	1.3	0.3
commercial	84.4	17.1
institutional	19.8	4.0
<hr/>		
TOTAL DEVELOPED LAND	493.7	100% Approx.
<hr/>		
	Acres	Percent of Total Area
Transportation, etc.		
streets & highways	350.0	1.5%
railways	72.5	0.3
Developed land	493.7	2.1
Vacant or Agricultural	22,603.8	85.8
<hr/>		
Total Twp. Area	23,520	100.0%
<hr/>		

Population: 1,757

Net Residential Density: $1757 \div 129.6 = 13.5$ p.p.n.a.

Source: Sudbury Area Planning Study Land Use Survey

4. CONCLUSION

For future planning purposes, the expansion of the central city may be anticipated to maintain approximately the existing gross urban density for the City of Sudbury of 11.0 persons per acre. This will occur by a combination of increased density in the built-up area and new development at a lower density than the existing gross density of the City. Land for new development as an extension of the existing city on full services may be expected to be required to correspond to a density on the order of 7 persons per gross acre. This is a lower density than that of some of the small towns in the region, but these towns have exceptionally high gross density due to a lack of industrial land.

For a guide to gross urban development densities outside the central city, the existing statistics provide a wide range from 6 persons per acre to 16 persons per acre. The latter figure would correspond to development on full services on small lots in areas with no industry and little commercial development. The net residential density would be on the order of 30 persons per acre, which is similar to the net residential density in the City of Sudbury. The figure of 6 persons per gross acre is typical of a mixture of serviced and unserviced development, predominantly residential, with net residential density in the range of 12 to 17 persons per acre.

The total amount of land required for a given population will obviously vary depending on whether development will be restricted to full urban sewer and water services. Combined with an acceptance that little industrial land would be required (1), gross urban densities of up to 16 persons per acre could be projected, such as in Levack. If provision is made for "normal" amounts of industrial and commercial land for typical lot sizes in the 6,000 to 7,000 square foot range, a gross density of the same magnitude as for the expansion of the central city could be adopted.

Unserviced development would consume land at a rate that could vary considerably. Gross densities are difficult to compare because roads usually take up a very high percentage of the land area as the density decreases.

As a generalized estimate the figure of 7 persons per gross acre is expected to give an adequate indication of the area of land that would be required for all purposes for the expansion of the population of the region.

(1) Mining land is excluded and considered separately from other urban land.

SECTION III

HOUSING

FIGURES

H1	Housing starts - Metro Sudbury	44
H2	Population capacity of the housing stock	48
H3	Housing stock by type of structure for comparative metropolitan areas, 1971	54

TABLES

		Page
H-A	Housing activity - Metro Sudbury, 1956-1972	45
H-B	Location of housing activity in Metro Sudbury, 1970-1972	47
H-C	Housing conditions - Metro Sudbury and Ontario	50
H-D	Vacancy rates	50
H-E	Newly completed and unoccupied dwellings comparative metropolitan areas, 1969-1972	53
H-F	Occupied dwellings by type, Metro Sudbury	55
H-G	Dwelling type and tenure, Sudbury city	56
H-H	Estimated costs of N.H.A. -financed dwellings	57
H-I	Estimated costs of new dwellings, 1971-1972	58

APPENDIX TABLES

		Page
H-A1	Growth comparison of population and housing capacity in Metro Sudbury: 1956-1971	60
H-A2	Population capacity of the housing stock: Method of derivation	61

SECTION III

HOUSING

1. INTRODUCTION

A general knowledge of the housing situation in the Study Area is considered to be necessary background to an examination of the need for urban development land in the future. This is particularly true in view of the emphasis on housing as the most serious problem of the Sudbury area in the past ⁽¹⁾.

The Ontario Housing Corporation's study entitled "The Sudbury Housing Market", published in 1968, provides detailed information on conditions at that time. This study relies on some of the material assembled in that report and reviews subsequent events in the area's housing activity.

The term "Metro Sudbury" as used here refers to the Census Metropolitan Area. In 1956, 1961, and 1966 this area comprised the City of Sudbury, the towns of Chelmsford, Coniston, Copper Cliff and Lively, the townships of Blezard, Neelon and Garson, Rayside and Waters, and a small unorganized area (Creighton). In 1971, the Town of Capreol and the townships of Balfour, Falconbridge, Valley East, Broder, Dill and Snider were added.

(1) Five Year Development Program, Final Report - Northeastern Ontario Development Council. February, 1969. p. 36-41.

2. HOUSING CONSTRUCTION ACTIVITY 1956-1972

The variations in housing construction activity in the past 16 years are illustrated in Figure H1, which shows the number of dwelling units started in each year in Metro Sudbury between 1956 and 1972. Table H-A provides additional information to permit an analysis of the housing activity.

With the exception of a two-year boom in 1961 and 1962, the number of housing starts was generally declining between 1956 and 1966. Housing construction started to rise significantly in 1967 and experienced a sharp upward trend until the end of 1971. Apartment construction starts showed a particularly spectacular increase. In a single year (1971) almost three times as many apartment units were started as in the entire ten-year period 1956-1966. Although housing starts have declined since the extraordinary 1971 figure, the 1972 figure was still high and will continue to create a more favourable consumers' market, particularly for apartments. The most severe fluctuations in housing activity have been in apartment construction. In the two peak years of 1962 and 1971 more than half the total housing starts have been in apartments, whereas in other years apartment units formed a relatively small proportion of the total. By considering 5-year intervals rather than individual years, the distortion of peak-year activity has been eliminated in Table H-A and the growth of apartment construction relative to other housing has been documented.

In 1968, the Ontario Housing Corporation had estimated that an annual construction rate of 912 dwelling units would be required in the City of Sudbury between 1968 and 1976 to fulfill the projected demand. In fact, since 1969 the rate has consistently exceeded this figure and in 1971 it reached over 2,500 units. The same source had predicted a requirement for 666 dwelling units annually in the Nickel Basin, excluding the City. Prior to 1972, this rate was also being exceeded quite substantially, but in 1972 the number of construction starts outside the City has seriously declined.

Data for 1970-1972 in Metro Sudbury shows, predictably, that the major building activity took place in Sudbury City (Table H-B). There was also significant construction in Balfour Twp. (Chelmsford) and Valley East and lesser activity in other parts of the Metro area.

FIGURE H 1
HOUSING STARTS - METRO SUDBURY



TABLE H-A

HOUSING ACTIVITY - METRO SUDBURY, 1956-1972

Year	'56	'57	'58	'59	'60	'61	'62	'63	'64	'65	'66	'67	'68	'69	'70 (1)	'71 (1)	'72 (2)
Total Dwelling Starts	695	543	676	670	486	838	1,232	484	271	309	394	884	743	1,779	1,961	3,761	1,685
Apartment Starts	NA	NA	NA	11	19	102	640	46	5	30	4	185	32	325	617	2,025	862
Starts, Other than Apt.	695	543	676	659	467	736	592	438	266	279	390	699	711	1,454	1,344	1,736	823
Apt. Vacancy Rates	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.3	0.3	5.0
Total Dwelling Starts 5-year Period (3)	3,070					3,134					5,761					3,761	1,685
Est. Apt. Completions 5-year Period (3)	11					812					576					617	2,025
Estimated Pop. Apts. (5)	30					2,192					1,555					1,666	5,468
Capacity of Other	12,160					9,244					18,392					6,944	3,292
New Units (4)	12,190					11,436					19,947					8,610	8,760
Population Growth 5-year Period (5) (6)	15,217					6,276					14,600					450 (7) (est.)	NA
Apartment Starts as Percentage of Total Dwelling Starts	1.0%					26.3%					20.2%					53.0%	

(1) Definition for Metro Sudbury concurs with the 1961 boundaries but also includes all of Valley East twp. & Balfour twp. in '70 & '71.
 (2) The 1972 data for Metro Sudbury covers the enlarged C.M.A. as defined by the 1971 Census.
 (3) Data for 1971 and 1972 have been left to show the annual increment.

(4) Population capacity is estimated at 2.7 people per unit for apts. and 4.0 people per unit for other dwelling types.
 (5) It has been assumed that most apartment projects would not become available for occupancy until the year following the start of construction.

(6) The population growth 1971-1972 has been determined for Sudbury C.M.A. definitions as described under footnotes (1) & (2). This allows a valid comparison between Estimated Population Capacity of new units in 1971 with Population Growth 1971-1972.
 (7) Figure shows population change 1971-1972 for the area as defined for 1971 only.

SOURCES: 1. C.M.H.C., Canadian Housing Statistics - Annual Reports for data on Dwelling Starts.

2. Ibid., for data on Apartment Vacancy Rates.

3. D.B.S., Census Data - 1956, 1961, 1966, 1971 for population data.

4. Municipal Assessment Data for 1972 population figures.

3. THE CAPACITY OF THE HOUSING STOCK

Figure H2 illustrates the growth of the population capacity of the housing stock in Metro Sudbury between 1961 and 1972. It is a gross estimate based on simple assumptions about the population capacity of a typical dwelling house or apartment unit, but it clearly shows the numerical improvement in the availability of housing relative to population ⁽¹⁾. Table H-A also documents this improvement by comparing the growth of housing capacity with population in three 5-year periods ~~between~~ 1957 and 1971. In the first period there was a housing deficit, whereas in the following two periods and in 1972 the capacity of the new housing exceeded the population growth. Based on the theoretical average capacity figures of 2.7 and 4.0 persons per unit for apartments and other dwelling units respectively, the Sudbury area still seems deficient in housing, but the gap between supply and need seems to be closing. The average number of persons per household has declined from 4.1 in 1961 to 3.9 in 1971, and the average number of persons per family has declined from 4.0 in 1961 to 3.9 in 1971. However, in municipalities such as Valley East and Rayside-Balfour the Census still records average family sizes as high as 4.6 in 1971. This would explain why the apparent deficiency in housing based on 4.0 persons per dwelling would be an exaggeration in these suburban areas.

(1) Appendix Tables H-A1 and H-A2 document the calculation of the capacity of the housing stock.

TABLE H-B

LOCATION OF HOUSING ACTIVITY IN METRO SUDBURY: 1970-1972

	Jan.-Dec. 1970			Jan.-Dec. 1971			Jan.-Dec. 1972		
	Sgle.Det'd., Semi-Det'd., Duplex	Row, Apart., Other	Total	Sgle.Det'd., Semi-Det'd., Duplex	Row, Apart., Other	Total	Sgle.Det'd., Semi-Det'd., Duplex	Row, Apart., Other	Total
Sudbury, city	461	644	1,105	627	1,940	2,567	295	925	1,220
Balfour, twp.	186	32	218	240	215	455	63	26	89
Capreol, t. ²							57	--	57
Coniston, t.	3	--	3	18	--	18	9	--	9
Copper Cliff, t.	1	21	22	2	--	2	1	--	1
Falconbridge, twp. ²							--	--	--
Lively, t.	35	131	166	11	14	25	--	--	--
Neelon- Garson, twp.	53	6	59	78	97	175	19	45	64
Rayside, twp.	58	--	58	93	--	93	33	--	33
Snider, twp. ³	--	--	--	--	--	--	--	--	--
Valley East, twp.	310	--	310	390	1	391	176	13	189
Waters, twp.	20	--	20	35	--	35	19	--	19
Unorganized ²							4	--	4
TOTAL	1,127	834	1,961	1,494	2,267	3,761	676	1,009	1,685

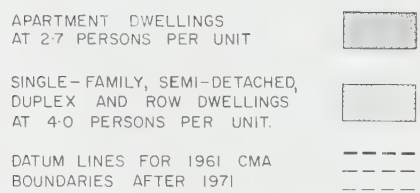
1. Although Sudbury C.M.A. definition was enlarged in 1971, C.M.H.C. statistics for 1971 are available only for the 1961 C.M.A. definition.

2. Not included in Metro Sudbury until 1971.

3. Included under "Unorganized" in 1972 which term also covers the townships of Broder and Dill.

SOURCES: Central Mortgage and Housing Corp., "Housing Statistics" (monthly reports); Jan./Sept./72-Jan./73

POPULATION CAPACITY OF THE HOUSING STOCK IN METRO SUDBURY



4. HOUSING CONDITIONS

The improvement in the housing stock is further corroborated by Census statistics relating to overcrowding. In 1961, 28.2% of Metro Sudbury's dwellings were reported as overcrowded. This figure was reduced in 1971 to 16.0%. While the total number of dwellings was growing, the average number of rooms per dwelling was also growing, from 4.6 in 1961 to 5.1 in 1971, and the proportion of dwellings with basic amenities also increased considerably (Table H-C).

Vacancy rates are also indicative of the adequacy of the housing stock and these have been increasing in recent years.

The severe shortage of apartments in the past had resulted in extremely low vacancy rates (Table H-A) but in 1972 a significant vacancy rate was recorded, which was above average for Ontario cities, particularly for bachelor and one-bedroom units (Table H-D). The continued high apartment construction rate in 1972 suggests that the vacancy rate may remain relatively high in the near future.

The greatest occurrence of apartment vacancies in 1972 was by far in New Sudbury (11.6%) where most of the recent development has taken place, but fringe areas have also been characterized by relatively high vacancy rates (7.9%).

The availability of newly completed dwellings in Sudbury, as shown by Table H-E, shows that even in times when large numbers of homes are built, few dwellings are left vacant very long, in comparison with other urban areas of similar size. Figures for 1972 show a slight improvement over earlier years, however.

TABLE H-C
HOUSING CONDITIONS - METRO SUDBURY
AND PROVINCE OF ONTARIO

	Number of Rooms Per Dwelling	Overcrowded Dwellings		Bath or Shower		Amenities	
		No.	%	No.	%	Flush No.	Toilet %
1971 Metro Sudbury	5.1	6,315	16.0	37,660	95.6	38,670	98.2
1971 Province	5.6	150,715	6.8	2,140,615	96.2	2,158,715	97.0
1961 Metro Sudbury	4.6	7,402	28.2	20,507	78.1	21,268	81.0
1961 Province	5.5	194,343	11.8	1,397,122	85.2	1,378,207	84.0

SOURCES: D.B.S.; 1971 Census (preliminary), Table 3.
D.B.S.; 1961 Census, Tables 77 and 81.

TABLE H-D
VACANCY RATES IN PRIVATELY INITIATED APARTMENT STRUCTURES
OF SIX UNITS AND OVER BY NO. OF BEDROOMS

		June 1971			June 1972			December 1972		
		Studio, Bachelor	1	2	3+	Studio, Bachelor	1	2	3+	Studio, Bachelor
METRO SUDBURY	0.7	0.3	0.4	0.0	0.0	6.7	4.9	5.1	3.2	6.4
								6.3	4.8	2.4

SOURCES: Central Mortgage and Housing Corporation,
Canadian Housing Statistics,
1972 (annual report); Table 18, P. 16,
C.M.H.C., "Annual Vacancy Survey".

5. DWELLING TYPES AND TENURE

The Ontario Housing Corporation Study on the Sudbury Housing Market reported that in 1966 Metro Sudbury possessed about the same proportions of different dwelling types as other Ontario municipalities ⁽¹⁾. In 1971, the proportions were again not unlike those of similar-sized metropolitan areas (Figure H3) despite the very high fluctuations in construction activity in Sudbury during the intervening period. Table H-F shows the growth of occupied dwellings by type in the period of 1961 to 1971, but the comparison is somewhat misleading because the 1971 Census Metropolitan Area is larger than the 1961 and 1966 areas, and the added areas include suburban communities which had a very small proportion of their housing stock in apartments. As documented in Table H-A the proportion of apartment construction starts since 1966 has exceeded the proportion of apartment units in the existing housing stock. Consequently, the present housing stock undoubtedly contains a higher proportion of apartment units than the 1966 housing stock; this fact tends to be hidden as a result of the re-definition of the Census Metropolitan Area. In order to reveal the true picture of the change in housing composition Table H-F includes a column showing the distribution of housing types in 1971 in the Census Metropolitan Area as defined for 1961 and 1966.

Table H-G documents the changes in the City of Sudbury, where a growth in the proportion of apartment units is recorded. The full impact of the 1971 apartment construction boom is probably not reflected in the 1971 Census record of existing apartment units. The proportion of the City's housing stock in apartments in 1973 is therefore likely to be higher than the 1971 figure.

The pattern of housing tenure is also illustrated in Table H-G, which shows practically no change between 1966 and 1971.

(1) The Sudbury Housing Market, Ontario Housing Corporation, 1968, p. 66.

6. HOUSING COSTS

Housing construction costs have for many years been higher than average in the Sudbury area. Table H-H shows that these costs have consistently been higher than in comparable-sized cities since at least 1961. It also suggests that the gap in unit construction cost between Sudbury and the other cities has been growing in recent years. In Ontario, only Windsor can rival Sudbury in this respect.

The cost of land used to be relatively advantageous in Sudbury (Table H-H), but this advantage has now been lost and Sudbury's typical N.H.A. lot costs well above the average for a city of its size, although it does not quite compare with Toronto or Hamilton prices. Lot prices are quoted in Table H-H regardless of the servicing or lack of it. No doubt much of the land subdivided in 1961 was not serviced, whereas most of the 1972 lots are serviced with water and sewers.

The combination of high construction Costs and high land costs gives Sudbury the highest total cost in Canada for single-family dwellings financed under the National Housing Act in 1972. (Most of Toronto's housing is not financed under N.H.A.. The Toronto area still holds the dubious honour of having the most expensive housing if all types of financing area included.) Table H-I shows that land costs account for the largest proportion of the recent spectacular increase in total cost, but the total cost figure is also slightly inflated because the average size of a 1972 house was 13% larger than the average size of a house built the previous year. An estimate is made in Table H-I of the increase actually due to land and construction costs, assuming an equal-sized house in 1971 and 1972. The result is somewhat less spectacular but it still shows a very substantial increase for a single year.

TABLE H-E
NEWLY COMPLETED & UNOCCUPIED DWELLINGS, QUARTERLY,
FOR HOUSES & DUPLEXES IN COMPARATIVE METROPOLITAN AREAS, 1969-1972
(dwelling units)

	1969				1970				1971				1972			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Hamilton	252	233	228	440	432	453	439	453	358	289	226	262	222	156	165	240
Kitchener	106	100	116	187	234	221	223	240	194	157	126	174	159	131	111	102
London	194	147	155	191	218	213	182	153	157	140	95	110	125	124	67	59
St. Catharines	not available				122	143	144	208	221	179	103	140	151	147	143	130
Niagara																
Sudbury	32	61	29	61	54	54	50	27	20	43	34	44	71	90	66	58

SOURCES: C.M.H.C., Canadian Housing Statistics, 1971; Table 17, p. 16
C.M.H.C., Canadian Housing Statistics, 1972; Table 16, p. 15

FIGURE H 3

HOUSING STOCK BY TYPE OF STRUCTURE
FOR COMPARATIVE METROPOLITAN AREAS
1971

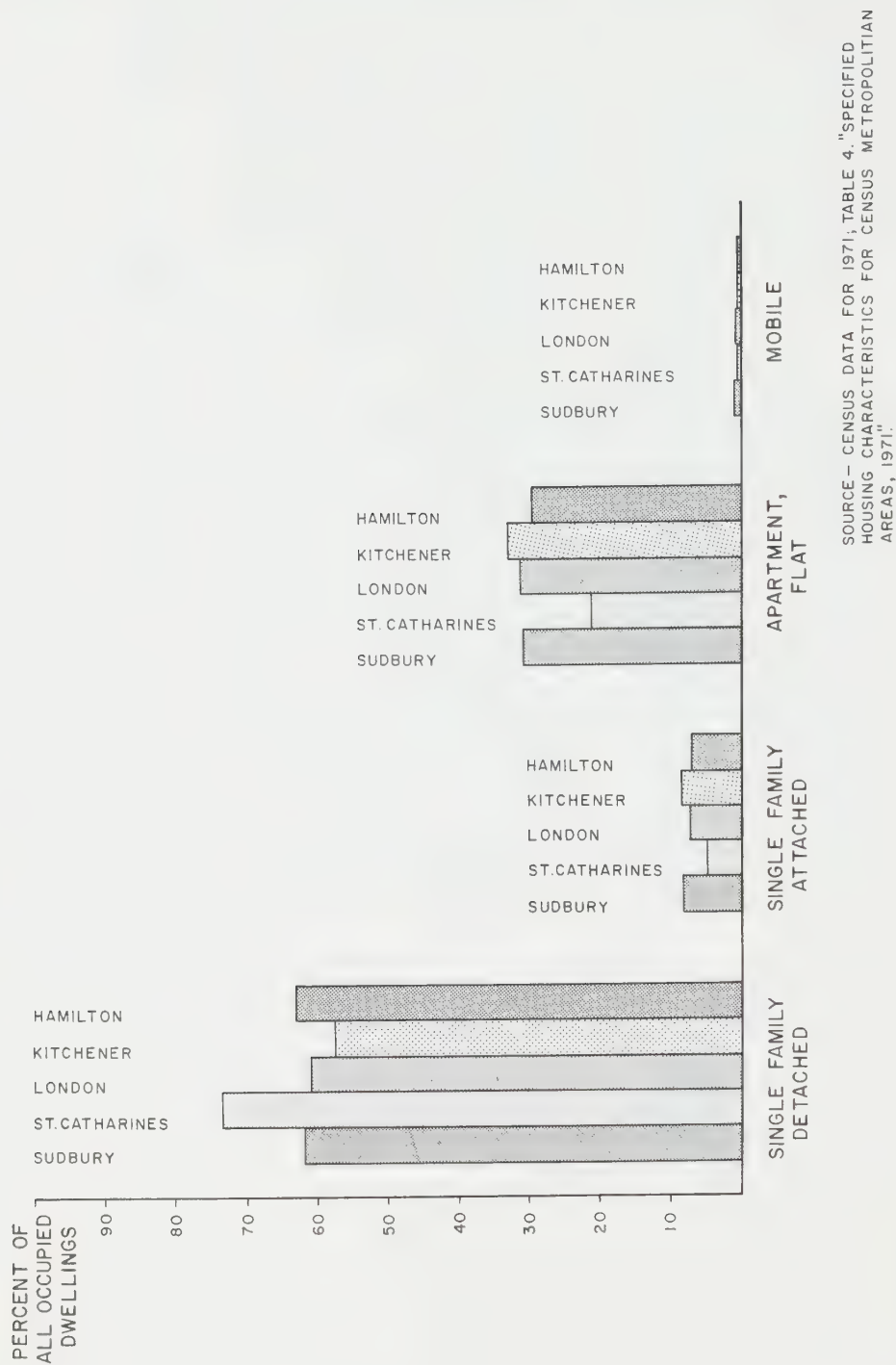


TABLE H-F

OCCUPIED DWELLINGS BY TYPE, METRO SUBBURY

	1961		1966		1971 (1)		1971 (2)	
	No.	%	No.	%	No.	%	No.	%
Total Occupied Dwellings	26,255	100.0	28,510	100.0	33,285	100.0	39,390	100.0
Single Detached	15,182	57.8	16,292	57.1	18,889	56.8	23,725	60.2
Single Attached	2,690	10.2	2,745	9.6	2,744	8.2	3,125	7.9
Apartment of Flat	8,363	31.9	9,471	33.2	11,529	34.6	12,240	31.1
Mobile	--	--	2	0.01	123	0.4	300	0.8

(1) Figures are shown for the C.M.A. as defined prior to 1971.

(2) Figures are shown for the enlarged C.M.A. as defined beginning in Jan. 1971.

SOURCES: D.B.S., 1961 Census; Table 77, p. 77-5

D.B.S., 1966 Census; Table 6, p. 6-1

D.B.S., 1971 Census (preliminary); Table 4, p. 14

Percentage calculations by S.A.P.S.

TABLE H-G
DWELLING TYPE AND TENURE -
SUDBURY CITY: 1966 and 1971

<u>Type</u>	1966		1971	
	No.	%	No.	%
Single Detached Dwelling Units	10,881	50.6	12,550	51.4
Apartments, Flats, Duplexes	8,552	39.8	10,040	41.1
Attached (semi or row)	2,053	9.6	1,850 (1)	7.6
Mobile Homes	--	--	5	0.02
TOTAL	21,486	100.0	24,440	100.0
<u>Tenure</u>				
Owned	11,606	54.0	13,285	54.4
Rented	9,880	46.0	11,155	45.6
TOTAL	21,486	100.0	24,440	100.0

SOURCES: D.B.S., 1966 Census; Table 6, p. 6-1
D.B.S., 1971 Census (preliminary); Table 3, p. 13
Percentage Calculations by S.A.P.S.

(1) The decline shown in the number of attached dwelling units between 1966 and 1971 is in accordance with census data. The 1971 figure is very questionable, however, and is suspected to be in error.

TABLE H-H

ESTIMATED COSTS OF N.H.A. - FINANCED DWELLINGS

		BUNGALOWS ONLY		ALL SINGLE FAMILY DETACHED DWELLINGS	
		1961	1966	1971	1972
<u>Construction Cost per Square Foot</u>		\$	\$	\$	\$
Sudbury		11.49	13.29	17.88	19.51
Kitchener		10.77	13.00	15.04	15.75
St. Catharines		10.55	13.03	16.44	17.77
London		10.78	11.98	15.45	16.19
Canada		10.61	12.56	15.28	16.22
<u>Land Cost</u>		\$	\$	\$	\$
Sudbury		1,473	3,156	6,490	8,240
Kitchener		1,851	3,838	6,999	7,467
St. Catharines		2,390	4,401	7,020	7,245
London		2,556	3,293	6,233	6,568
Canada		2,454	3,006	4,588	4,885

SOURCE: C.M.H.C., Canadian Housing Statistics 1972 (annual report); Table 86, p.70
C.M.H.C., Canadian Housing Statistics 1966 (annual report); Table 95, p.81
C.M.H.C., Canadian Housing Statistics 1961 (annual report); Table 83, p.52

TABLE H-I
ESTIMATED COST INCREASES OF NEW N.H.A.-FINANCED
SINGLE-FAMILY DWELLINGS BETWEEN 1971 AND 1972,

METRO SUDBURY

	1971	1972	% change	Equivalent figures for 1972, pro-rated for 1971 finished floor area	% change, pro-rated for 1971 floor area
Total cost	\$ 26,580	\$ 33,146	+24.7%	\$ 30,282	+13.9%
Land cost	\$ 6,490	\$ 8,240	+27.0%	\$ 8,240(2)	(2)
Other costs (1)	\$ 20,090	\$ 24,906	+24.0%	\$ 22,042	+ 9.7%
Construction cost persquare foot	\$ 17.88	\$ 19.51	+ 9.1%	\$ 19.51	+ 9.1%
Finished floor area	Sq. ft. 1,085	Sq. ft. 1,226	+13.0%	Sq. ft. 1,085	--

SOURCE: C.M.H.C., Canadian Housing Statistics 1972,
(annual report); Table 86, p. 70.

- (1) "Other costs" are largely construction costs, but also include incidental costs such as cost of registration.
- (2) It is assumed for the purpose of this comparison that the land cost increase is not related to the larger finished floor area in 1972. In fact, the average lot size may be larger in 1972 than in 1971, to correspond with the larger average floor area of the dwellings, and this may have a small bearing on the land cost.

7. CONCLUSION

The very high rate of housing activity in the past three or four years has substantially altered the housing picture in the Sudbury area since the time when housing was described as Sudbury's major problem. The area seems to be subject to sudden bursts of dwelling construction activity, followed by periods of relative inactivity, particularly in the apartment construction field. A slow-down in housing activity similar to the post-1962 slow-down would not be unexpected in the immediate future. The apartment vacancy rate is now unusually high and the present employment climate is quite dull. The prices of single-family dwellings nevertheless remain high and this market may continue to be served, but apartment construction is likely to decline severely in the immediate future.

TABLE H-A1

GROWTH COMPARISON OF POPULATION AND HOUSING CAPACITY
IN METRO SUDBURY: 1956-1971

Year	Census Population	Population Change in Five Years	Population Capacity of The Housing Stock (1)	
			Total	5-Yr. Growth
1956	95,582	+15,217	N.A.	N.A.
1961	110,799	+ 6,276	94,068	+ 7,535
1966	117,075	+12,054	101,725	+15,703
1971	129,129	+38,348 (*)	117,428	+39,117 (*)
1971 (*)	155,425 (*)		141,258 (*)	

- (1) The calculation of the capacity of the housing stock is shown in Table H-A2
- (*) The definition of the Census Metropolitan Area was changed in 1971 to include a larger area. Figures marked with an asterisk relate to the larger area. All other figures relate to the earlier Census Metropolitan Area.

SOURCES: D.B.S., Census Data for the years noted.
1971 Data from 1971 Census: "Population and Housing Characteristics by Census Tracts - Sudbury", Catalogue 95-719 (CT-19A).

TABLE H-A2

POPULATION CAPACITY OF THE HOUSING STOCK-METHOD OF DERIVATION

(METRO SUDBURY)

	Single Detached & Single Attached		Apartment or Flat (1)		Total	
	Number	Pop. Capacity (2)	Number	Pop. Capacity (2)	Number	Pop. Cap. (2)
1961	17,872	71,488	8,363	22,580	26,255	94,068
1966	19,037	76,148	9,473	25,577	28,510	101,725
1971	21,587	86,348	11,510	31,080	33,097	117,428
(by 1961 census definition)						
1971	26,850	107,400	12,540	33,858	39,390	141,258
(by 1971 census definition)						

(1) Includes mobile home units also.

(2) Population capacity is calculated by allowing an average of 4.0 persons per single family dwelling and 2.7 persons per apartment of flat unit.

SOURCES: D.B.S. CENSUS DATA - 1961 Census: Table 77, p. 77-5

1966 Census: Table 6, p. 6-1

1971 Census (preliminary): Table 4, p. 14

Pop. Capacity calculations done by S.A.P.S.

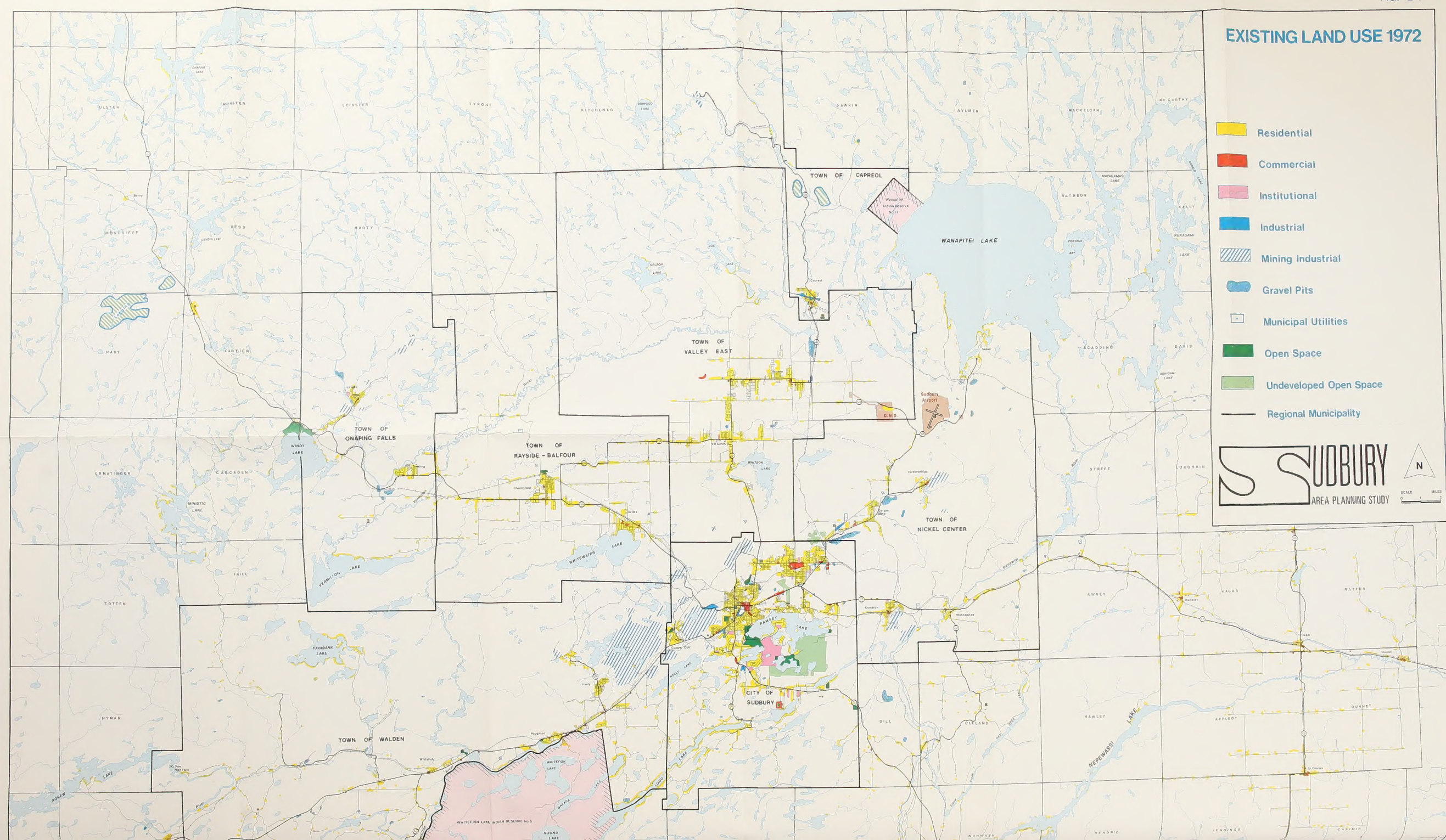
EXISTING LAND USE 1972

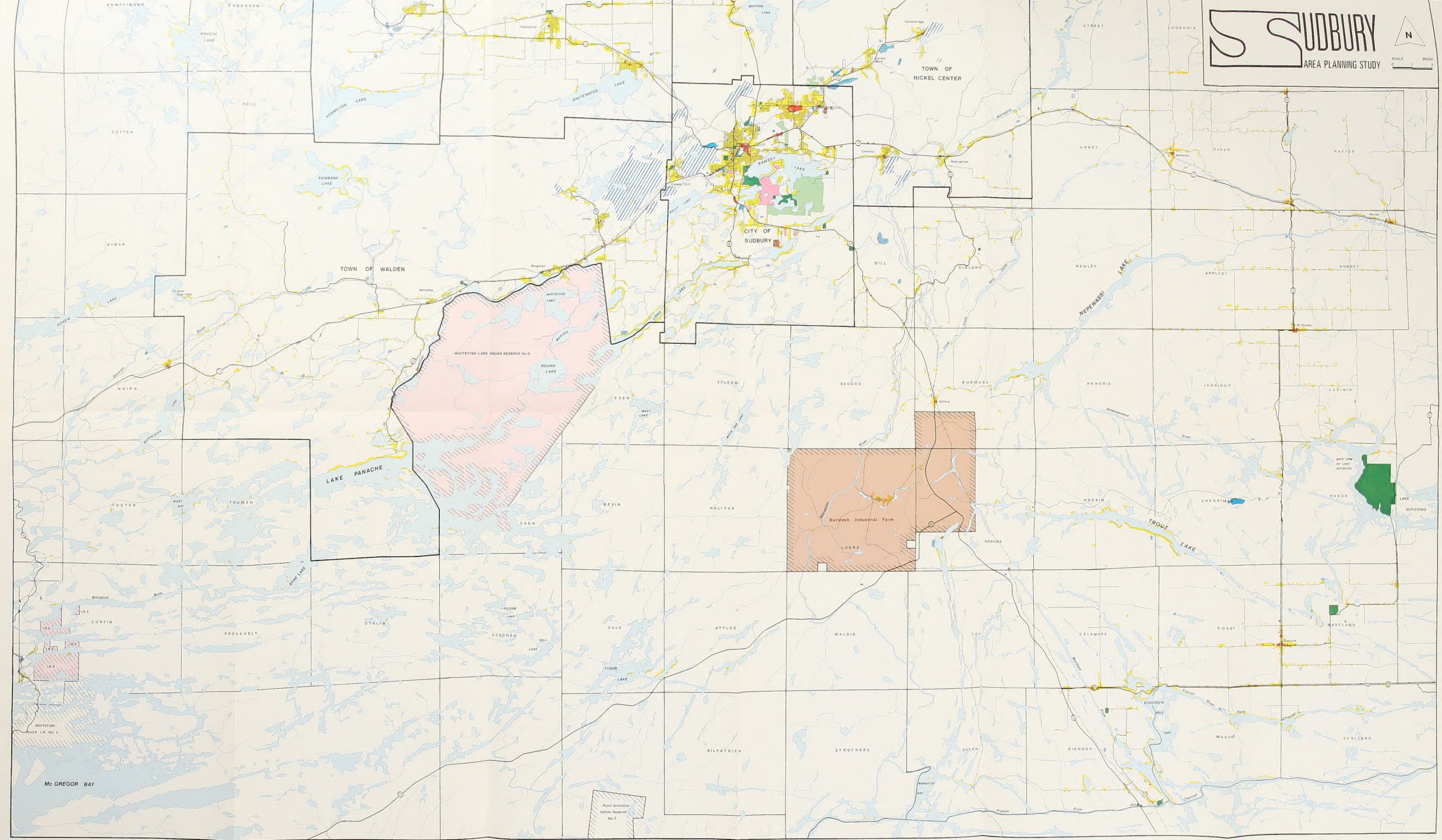
- Residential
- Commercial
- Institutional
- Industrial
- Mining Industrial
- Gravel Pits
- Municipal Utilities
- Open Space
- Undeveloped Open Space
- Regional Municipality



N

SCALE
MILES





3 1761 11546234 3

